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ABSTRACT

This guide was designed to help teachers consider the essential nature of communication in the teaching-learning process and to share responsibility for communication across the curriculum. The guide has four sections. The first section examines the role of communication in one teacher's classroom. A discussion of this teacher's belief that learning and communication are inseparable serves as the framework for introducing a model of communication which uses concentric circles to emphasize the interaction and integration of individual capacities, the elements of the communication process, and the audience. Goals for developing communication across the curriculum based on the model are presented. The second section identifies abilities and understandings that students use intuitively as they use language to learn and think in the classroom. The third section explores strategies for incorporating communication across the curriculum. This section suggests that interaction and active construction of meaning through language are important to all learning whether in or out of school. The fourth section discusses how the communication processes and skills used by students flow from the instructional activities in which they are involved and how they can be tailored to students' individual needs and abilities. A "Form for Analyzing Communication Abilities and Understandings Across the Curriculum" is appended to help teachers identify, monitor, and assess the communications skills they use. A bibliography of more than 200 references is included.(JD)

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A Guide to Developing Communication Across the Curriculum

SP 031 511

Iowa Department of Education

A Guide to Developing Communication Across the Curriculum

Iowa Department of Education
May 1989

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Foreword

This guide is the result of a 1985 mandate from the Iowa General Assembly, calling for the Department of Education to develop "subject matter committees and committees that cross subject matter lines for coordination of curriculum at all education levels."

This mandate was a response to one of the major recommendations of the Legislature's Excellence in Education Task Force report of 1984, *First in the Nation in Education* (FINE). The Department of Education based its plan for implementing the legislation on recommendations from the report.

In 1986, the first response to the mandate was published in the form of six guides to curriculum development in the areas of arts, foreign language, language arts, mathematics, science, and social studies. This series focused on vertical articulation of curriculum in the subject matter.

This publication, along with others in this second phase of the effort, focuses on horizontal articulation across subject areas. It is designed to guide faculties and administrators in developing curriculum and improving the use of communication for learning across the curriculum. It is intended to help districts enhance and build upon their current local curriculum.

Acknowledgments

The Steering Committee for the Horizontal Articulation Curriculum Development Project addressed the task in a milieu that required an extraordinary commitment of time and talent by those who would undertake writing and reviewing assignments. We want to thank those people for sharing their personal and professional resources so graciously and generously. We commend them for their efforts to help us understand and articulate student competencies in communication across the curriculum.

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Introduction

The responsibilities of teachers who guide the learning of students of different ages in the many disciplines of the modern school curriculum are unique in many ways. Yet, as educators we all share many goals. All of us place primary importance on the development of those in our care. We are concerned about the kind of people they become. We want them to be happy and self-sustaining individuals, able to relate and to share their visions with others.

We are also concerned about their learning, about their development as learners. We want them to find joy in learning, to experience the special enthusiasm that we feel about the areas we have chosen to teach. We want them to control thought, language, and skills of learning so that they can become independent, lifelong learners.

Though we share these goals, we have many differences—differences in the disciplines we teach, in the ages of our students, and in the instructional strategies we use. Yet, even here there is common ground. For all teachers and for all learners, the primary medium of learning is communication—communication as we talk with our students and as they talk with each other, as we write and read together, and as we explore meanings conveyed visually and nonverbally; as we interact with parents; and as we teachers learn and share in communication with our colleagues. Truly, communication is the glue that binds us in education.

For all teachers and for all learners, the primary medium of learning is communication.

This guide is an invitation for all teachers to consider the essential nature of communication in the teaching-learning process and to explore our shared responsibility for communication across the curriculum. To emphasize our shared concern for the horizontal articulation of communication across the curriculum, this guide addresses all teachers jointly, rather than including separate sections or activities for teachers in specific fields or levels. To do this, and to attempt to bring the classroom into the static pages of a printed guide, the guide uses a series of classroom scenarios set in "a classroom in your teaching area and level in a school district in Iowa." As you read these scenarios, visualize your classroom and think of learning experiences you have used that are similar to the ones described. Share those visions with other teachers, both in your teaching area and across the curriculum, who are also exploring the guide. That sharing will highlight the central place of communication in all teaching. Ideally, teachers about to use this guide will be involved in a staff development activity with a group of colleagues with whom they can share, question, and debate the pertinence of ideas. As an alternative, an individual teacher might seek out at least one other colleague with whom to work through the process.

The guide has four sections. The first section examines the role of communication in the classroom by visiting our teacher's (T's) classroom. Discussion of T's belief that learning and communication are inseparable can help you to examine your own beliefs. That will serve as the framework for introducing a model of communication which uses concentric circles to emphasize the interaction and integration of individual capacities—perceiving, moving, feeling, thinking, creating, using language—and the elements of the communication process—language function, communication mode (oral, written, visual/nonverbal), and audience. The section concludes with goals for developing communication across the curriculum based on the model.

The second section identifies abilities and understandings that students use intuitively as they use language to learn and think in the classroom. An extension of the classroom scenario from the first section shows how students and teachers use communication acts to carry out complex language functions. This section includes a list of communication acts used to carry out language functions; examples of oral, written, and visual communication situations used in and out of school; a list of understandings associated with communication acts; and an outline of interdependent skills that support communicative performance. These lists are used for reference in analyzing communication abilities and understandings required in classroom activities.

Communication processes and skills must flow from the instructional activities and be tailored to student needs.

In the third section, we return to T's classroom to explore strategies for incorporating communication across the curriculum. This section suggests that interaction and active construction of meaning through language are important to all learning both in and out of school. It shows how teachers can use a combination of incidental and direct instruction to facilitate students' natural abilities to use language for learning. As you read the scenarios, try to relate these strategies to your own teaching. The instructional strategies central to each approach are listed for reference.

The fourth section recognizes that concern for communication by teachers across the curriculum is intended to facilitate learning in their respective areas, not to prescribe it. This means that the communication processes and skills used by groups of students must flow from the instructional activities in which they are involved and be tailored to students' individual abilities and needs. Thus, teachers need a systematic way to identify the communication abilities and understandings required in the learning experiences they use. Further, they need a way to monitor their students' needs and growth. Teachers also need a way to assess whether the communication processes they use most effectively facilitate learning. Finally, teachers need to determine whether there is continuity both for learners at each instructional level and for students as they progress through the school curriculum.

The "Form for Analyzing Communication Abilities and Understandings Across the Curriculum" is designed to help teachers identify, monitor, and assess the communication abilities and understandings they now use. Strategies are discussed for using the form as a planning tool to enhance classroom communication, as a tool for monitoring and diagnosing students' growth, and as a tool for promoting horizontal and vertical articulation of communication across the curriculum. To aid you in using the form, an analysis of the instructional activity from the first section is included. Also, the appendix contains analyses of two more instructional activities which can be used for practice.

The annotated bibliography contains both theoretical and practical sources concerning communication across the curriculum which represent varying instructional levels and curricular areas. Key sources are marked with an asterisk.

Communication: Essential to Learning

Communication in a Classroom

The Setting: A classroom in your teaching area and level in a school district in Iowa.

The students talk excitedly as they notice the objects displayed at stations around the room. Immediately they gather in small groups at their work areas. The teacher (T) notices that the displays have attracted interest and have already caused the students to interact, sharing observations with their peers on the topic discussed the previous day.

When all the students have gathered, T says, "I thought you might like to see the objects we were talking about yesterday. Talk together in your groups to see what you can learn from the objects. Also, talk about the questions that you have."

T observes the students, noting the strategies that individual students use when talking collaboratively to learn. T notices that one group is having trouble interacting. T joins the group after observing that their exploration is restricted by one student who makes definitive statements and criticizes the ideas of others. T uses questions to focus the group's attention and to sustain the contributions offered by other students. In this way, T facilitates the group's progress by providing support, which has been called an instructional scaffold, for their use of dialogue strategies. T then moves away, but continues to monitor the group's interaction.

The teacher facilitates the group's progress by providing an instructional scaffold.

After a period of animated discussion, T suggests that the groups attempt to conclude their exploration together in two or three minutes. Next, T suggests that students use their learning logs to record their discoveries and questions.

T encourages two students who ask if they can use drawings or diagrams to record ideas. As the students work individually, T also uses a personal journal to record ideas that were overheard during the group interactions. This list of ideas will be used to guide the subsequent large-group discussion. T also records observations concerning students' facility in using collaborative talk, drawing, and writing to learn. These observations will be useful in supporting students' future growth in communication processes.

When the students have had time to complete their logs, T suggests that they share their observations and questions with a partner who was not in their original group. Again, T observes as partners share their logs and discuss what they have learned.

T offers support to a pair of students who appear to be criticizing each other's observations, rather than exploring them. T is interested to note that many of the students have used visual expression in their logs as a way to record their observations.

T concludes the lesson by eliciting and listing "discoveries" and "questions" from the group. Because they have had time to form and try out ideas collaboratively through talk, writing, and visual expression, all students appear confident to share and to express uncertainty about their conclusions. T provides the students with a collection of books, pictures, tapes, and disks related to their questions. Students are encouraged to use their learning logs to record new information. Jointly, they plan to use the next few lessons to explore their questions.

A Teacher's Beliefs about Communication and Learning

The classroom situation just described could represent any curricular area and any grade level, K-12. The teacher who guided this learning experience held a number of beliefs, implicitly or explicitly, about communication and learning. Examining these beliefs can help teachers consider their own views about the role of language and communication in teaching and learning.

1. Learning requires the active construction of meaning; that is, the learner must create a personal understanding of experience.
2. Learning is communicating since it involves the interpretation and creation of meaning by the student, not the transference of knowledge from teacher to student.
3. Language and thinking are basic to all communication and, thus, to learning across the curriculum.
4. The interactive communication processes of composing and comprehending through oral, written, and visual modes are inherent in all subject areas.
5. Blending these alternative ways of representing understandings enhances learning since students engaged in speaking, listening, writing, reading, viewing, and visual expression are active creators of meaning.
6. Communication processes and skills are best learned holistically in real situations; that is, students learn language best as they learn through language.
7. All teachers share responsibility for the development of communication processes and skills.
8. Students enter school as effective language users, yet growth in communication processes is lifelong. Increased communicative competence involves facility to use language and thought to meet an expanding variety of situational demands.
9. Collaborative learning activities can facilitate students' learning, as well as supporting their growth in the processes of learning and communicating.
10. Support of peers or the provision of an instructional scaffold by the teacher can often permit students to do what they could not do alone.

All teachers share responsibility for the development of communication processes and skills.

A Model of Communication: Developing Communication Across the Curriculum

Learning and communication are inseparable. Thus, an understanding of the nature of communication is essential for all teachers. Diagram 1 is a model of communication which encompasses the principles stated above. It can serve as a guide for teachers across the curriculum as they attempt to support students' growth in the processes of communication essential to learning.

In the model, the inner circle represents the basic capacities each individual possesses. The three outer circles represent the elements of the communication process: language function, communication mode, and audience. When the outer circles are rotated, they offer the possible communication situations people encounter lifelong. Only the outer circle, audience, is dependent on age level. As students mature socially and emotionally, their ability to communicate with larger and more impersonal audiences can be expected to develop.

Concentric circles are used in this model for three reasons: (1) to show that the components within each element are integrated; (2) to show that the three elements are integrated within any communicative act; and (3) to show that growth in individual

Diagram 1

Model of Communication

Interaction of Individual Capacities, Language Functions, Communication Modes, and Audiences

Key

Orange - Individual Capacities
Green - Language Functions
Blue - Communication Modes
Purple - Audiences

Source: Iowa Department of Education. *A Guide to Curriculum Development in Language Arts*, Des Moines, IA: Iowa Department of Education, 1986, p. 12.

capacities and in elements of the communication process is global and continuous, not linear and sequential.

For example, in the classroom situation described earlier, students used all of their individual capacities in concert as they explored and shared understandings about the objects. At different times in the lesson, different combinations of language functions were used. (See Diagram 1.) Students used the rituals of group process to interact (ritualizing) as they speculated about the objects (imagining), attempted to form ideas and share them with others or to seek clarification (informing), or attempted to persuade others of their viewpoints (controlling).

Personal feelings were conveyed not only as students related observations to personal experience, but as they resolved difficulties in communication with the support of peers or teacher (feeling). These communicative functions were carried out through the integration of composing and comprehending processes through oral, written, and visual modes and with audiences ranging from self to a small, known group. When composing, students were conceptualizing and presenting their messages, often needing to pause to reflect or to revise their message to clarify their intended meaning or to take account of their audience. In presentation of messages, students used personal thought, oral expression, nonverbal expression, and graphic representation (drawing, writing, etc.). Similarly, when comprehending, students created or re-created messages by giving attention, perceiving symbols and responding to them, interpreting them to shape meaning and attach personal significance, and evaluating and applying the derived message. Developing these communicative competencies is a continuous process, dependent on the interplay of elements in particular communication contexts. Such skills are not developed in a prescribed sequence, nor in isolation.

A teacher who understands the central role of communication in learning and who understands the interactive nature of the communication process will be most adept at facilitating learning through language. The purpose of this guide is to expand teachers' understanding of communication processes and of the goals for developing communication across the curriculum, which are listed below. A more complete description of the concepts and skills necessary to achieve these goals is included in the next section. It is followed by discussion of instructional strategies for guiding growth in communication. The final section includes steps to help all teachers, K-12, analyze and extend the communication abilities which support learning in their fields.

A teacher must understand the central role of communication in learning.

Goals for Developing Communication Across the Curriculum

A teacher concerned with communication across the curriculum helps students to:

- use the interactive processes of comprehending and composing to interpret and present understandings through oral, written, and visual/nonverbal modes.
- use language and thinking processes singly or in collaboration with others to construct personally meaningful understandings of concepts and skills.
- use the specialized communication processes and skills of individual fields of study.
- value the importance of communication in all human endeavors.
- develop the ability to vary communication processes and skills according to function (imagining, feeling, controlling, informing, ritualizing), audience, and mode.

Communication Abilities and Understandings

The ability to communicate is developed in process, drawing on the innate human capacities each individual possesses.

Communication involves an interactive complex of processes. The abilities that facilitate communication develop holistically over time. In most communication acts these abilities are used intuitively, rather than consciously. Consider, for example, the variety of skills and associated concepts involved in the simple greeting of a friend. The sender must perceive the other person, respond to feelings that create a desire to acknowledge and be acknowledged, use thinking and language capacities to create a specific greeting, and transmit it by using verbal, gestural, facial, or tonal signals. (See Diagram 1.) This communication act integrates a full range of individual capacities, combines at least the ritualizing and feeling functions of language, and uses the oral and visual/nonverbal modes. It is expressed by the sender and is comprehended by the receiver instantaneously. Clearly, neither the composer nor the comprehender of this message consciously orchestrates the many understandings and skills used. Yet, both in some way "know" the processes and strategies involved. For communication to occur, both composer and comprehender must cooperatively engage in the construction of shared meaning. This is true whether the communication involves personal thought (where the intended audience is oneself), face-to-face dialogue, or written communication shared over space and time.

The complexity of language and language learning is evident when it is recognized that each communication act differs depending on nuances in the combination of language functions, modes, and audiences involved. The ability to communicate is more wondrous when one considers that even an infant is able to carry out a communication act such as a greeting.

An ability as complex as communication is not learned, nor should it be taught, as a sequence of specific concepts and skills. The language user does not analyze each communication situation and consciously apply a sequence of concepts and skills. Not only would the time required inhibit the flow of communication, but the demands on cognitive functioning would be overwhelming. Rather, ability to communicate is developed in process, drawing on the innate human capacities each individual possesses. Facility with language is developed as meanings are negotiated through interaction in natural learning situations in and out of school. Growth is often supported by more mature language users who help the novice convey his or her meaning intentions and understand the messages of others. In this way, each person intuitively develops the facility to compose and comprehend messages for a range of functions in diverse situations.

Concurrently, understandings that govern communication processes are internalized. These internalized understandings may, at times, be raised to a conscious level and utilized in shaping or interpreting particular messages. Conscious thought about the form

of communication might result from difficulty by either the sender or the receiver in constructing an intended meaning, perhaps due to lack of clarity about the subject or because of differences between the sender and receiver in age, status, or familiarity. Response to communication which is particularly effective or unusual might also cause conscious attention (e.g., a pun, an ad, a description).

As students mature, they must continue to develop facility in the language of life outside of school and the language of schooling. Students must continue to grow in proficiency in general communication abilities and in variations used in specific disciplines or subject areas. Consider, for example, the complexity of communication strategies required in an interview to gain information or to seek employment, in the use of specialized notation systems (mathematical, musical, scientific), or in "reading" a textbook, a painting, a diagram, or a blueprint. Each of these situations requires the extension and adaptation of abilities appropriate to the context. The fact that communication acts vary to fit specific situations makes language learning a lifelong process. It also makes support for the development of communication the responsibility of teachers across the curriculum.

To integrate communication across the curriculum, K-12, all teachers need to understand the communication processes used in learning and thinking. This section will help teachers identify communication acts which students use both in and out of school to carry out language functions. It also includes a list of associated understandings and supporting skills that underlie these abilities.

Communication Acts Used in Five Language Functions

During the last 20 years a number of language researchers (Britton, 1970, 1975; Halliday, 1973, 1975, 1978; Kinneavy, 1971; Moffett, 1968; Tough, 1976, 1977, 1979; Wells, 1973, 1975, 1981, 1986; Wood, 1977a, 1977b, 1981) have explored the functions for which preschoolers, school-aged students, and adults use language in oral, written, and visual/nonverbal modes. Most researchers recognize a number of broad functions which children develop before school-entry age. They list a variety of communication acts that are used to carry out each function depending on the particular intention and situation. Language users develop these functional nuances as the communication situations in which they engage, both in and out of school, become more diverse.

Table 1 is a list of exemplary communication acts used in the five language functions found in the Model of Communication (Diagram 1). This list is based primarily on the descriptions of Halliday (1975), Wells (1973, 1975), and Tough (1977, 1979).

In using the list, it should be remembered that most communication acts fulfill more than one function. For example, a communication act such as "agreeing" can involve the controlling, feeling, and informing functions.

Table 1

Communication Acts Used by Composer and Comprehender in Five Functions of Language

Controlling function

Monitoring actions (own, others)
Seeking another's attention
Wanting
Requesting
Offering
Agreeing
Permitting
Commanding, directing
Accepting direction
Refusing, rejecting
Planning, formulating
Suggesting
Collaborating
Stating conditions
Contracting
Arguing
Asserting
Questioning
Intending
Promising
Bargaining
Warning
Threatening
Prohibiting
Justifying
Seeking justification
Evading
Criticizing

Feeling function

Vicarious experiencing of events, feelings (real or imagined)
Reliving past events, feelings
Empathizing
Expressing endearment
Exclamation
Approving
Disapproving
Agreeing
Disagreeing
Apologizing, expressing regret
Blaming
Narrating, telling stories (real or imagined)
Expressing state or attitude
Questioning state or attitude
Encouraging
Challenging
Congratulating
Commiserating
Rejecting
Expressing conditions
Justifying
Seeking justification
Evading
Taunting

Imagining function

Creating situations, events, persons (real or imagined)
Projecting self into situations, events, feelings (real or imagined)
Reflecting on experiences
Describing sensory impressions, feelings from verbal, visual, or sensory input
Anticipating or predicting events, details, sequence, causal relationships
Associating ideas
Wondering, questioning, speculating
Anticipating problems and solutions
Taking different perspectives

Table 1, cont.

Ritualizing function

Greeting
Addressing
Bidding farewell
Initiating, changing, ending topic
Checking
Filling silences
Taking/giving turns
Seeking recognition
Recognizing, acknowledging procedural or conventional elements of a communication situation (e.g., rules of parliamentary procedure, conventions of a letter)

Informing function

Labelling, naming
Pointing out, identifying
Making statements
Describing
Classifying
Narrating, telling stories
Reporting
Concluding
Generalizing
Theorizing, hypothesizing
Explaining
Justifying
Agreeing
Identifying problems
Questioning
Responding
Wondering, speculating
Anticipating, predicting
Reflecting
Relating causally, associating
Affirming
Denying
Verifying
Rejecting
Acknowledging
Arguing
Collaborating

The following classroom interaction illustrates how varying communication acts are used to carry out the five language functions. It shows how one communication act integrates multiple language functions. This interaction might have occurred in the classroom described in the previous section when the teacher (T) interacted with the group of students whose exploration of objects was impeded by the definitive and critical statements of one member. The teacher is labelled T; students are labelled A, B, and C. Language functions are abbreviated CONT (Controlling), FEEL (Feeling), IMAG (Imagining), RIT (Ritualizing), and INF (Informing).

Dialogue		**Communication Acts/Functions**
T:	How is your group coming?	Questioning (INF, CONT)
A:	I've got it all figured out, but they don't get it.	Asserting, explaining, identifying problems (CONT, INF, FEEL)
B:	Who says you know it all?	Challenging (FEEL, INF, CONT)
C:	It would help if you'd both listen.	Suggesting, arguing, disapproving (CONT, INF, FEEL)
T:	C, tell me what you've discovered.	Addressing, affirming, directing, questioning (RIT, CONT, INF)
C:	Well, I think that this is used with this.	Speculating, describing (INF, IMAG)
A:	No, it isn't!	Rejecting, criticizing (INF, CONT)
B:	Yeah! And then this could be used this way.	Agreeing, collaborating, describing, speculating (CONT, FEEL, INF, IMAG)
T:	(to C and B) Tell us more about why you think that.	Questioning, directing, giving turns (INF, CONT, RIT)
A:	Well, it looks like this would move when this does.	Speculating, predicting (INF, IMAG)
T:	Those seem like useful observations. Why don't the three of you continue talking. I'll check back later.	Affirming, directing, promising (INF, CONT)

Teachers can use Table 1 to identify the range of communication acts and functions which they and their students use in daily classroom interactions.

Uses of Oral, Written, and Visual Communication

Growth in communicative competence involves an ability to form and comprehend messages to fulfill a range of functions in a variety of communication situations through varying modes and with varying audiences. Table 2 contains a list of oral, written, and visual communication situations used both in and out of school. Teachers should use this chart to identify the uses of communication they commonly employ in class and to identify uses of communication which could be used to more actively involve students in learning. Teachers should compare this list to Table 1 to identify the functions of language and the communication acts typically associated with each of these uses. This comparison will enhance awareness of the communication abilities that students need to develop.

Table 2

Examples of Oral, Written, and Visual Communication Used In and Out of School

A. Oral Communication (Speaking, Listening)

1. Conversation
2. Discussion
3. Greeting/social interaction
4. Introduction
5. Interview
6. Debate
7. Dramatization
8. Public speaking
9. Reading prose, poetry, plays
10. Mass media
11. Directions
12. Reports
13. Announcements, messages, explanations
14. Personal stories, jokes
15.
16.

B. Written Communication (Writing, Reading)

1. Journals/personal learning logs
2. Personal narratives
3. Letters
4. Reports
5. Fiction—prose, poetry, plays
6. Nonfiction—autobiography, biography, editorial, essay, history
7. Directions
8. Announcements, messages, explanations
9. Minutes
10. Forms—creating, filling in, interpreting
11. Signs, labels, diagrams, graphs, tables
12. Notes
13. Outlines—to organize or to remember
14.
15.

C. Visual Communication (Expressing visually/nonverbally, Viewing)

1. Facial expression
2. Gesture
3. Pantomime
4. Eye contact
5. Clothing
6. Color
7. Movement
8. Sign language
9. Visual arts
10. Electronic media
11. Signs, diagrams, graphs, tables, trademarks
12. Artifacts
13.
14.

Source: Iowa Department of Education. *A Guide to Curriculum Development in Language Arts.* Des Moines, IA: Iowa Department of Education, 1986, page 13.

Understandings Associated with Communication Acts

People learn language while using language to communicate and to learn. They also intuitively learn about language by using it. As students mature linguistically and cognitively, they grow in ability to think consciously about language and communication—they develop what is called metalinguistic awareness.

While most communication acts are carried out nonconsciously, awareness of communication can, at times, facilitate the shaping or interpretation of a message to fit a particular intention.

Table 3 lists understandings associated with communication acts which students come to "know" and use.

Performance Skills Which Facilitate Communication

While guiding growth in communication processes and skills may seem challenging to many teachers, it is really a natural part of effective instruction.

Children enter school as competent language users. They have developed the ability to use language for a variety of functions with different audiences. Young children freely communicate through literacy, whether they yet write or read in the traditional sense. Their ability to perform these acts demonstrates their competence in a number of interdependent communication skills which develop naturally through use. These abilities provide the base for continued refinement of performance skills which facilitate communication. This refinement will occur best through meaningful communication in a supportive environment, not through formal instruction on isolated skills. This suggests that all teachers need to support the extension of the many oral, written, and visual/nonverbal performance skills that facilitate learning and communication. This does not mean that teachers in various subject matter areas should add myriad lists of specific communication skills to their instructional goals. Effective integration of communication across the curriculum will not result from isolated drill on mechanics of language use.

Instead, it requires that teachers who are aware of the nature of communication processes and skills support students in reaching their communicative goals. Table 4 contains a list of communicative performance skills. It shows skills common to all communication acts along with performance skills used specifically in the oral, written, or visual modes. The skills are interdependent, that is, factors in one area affect factors in other areas. For example, the relationship with audience affects the style of language (formal or informal), the word choice (semantics), and the patterns of expression used (syntax).

This list of performance skills should be used with the list of communication acts used to carry out language functions (Table 1), the list of common uses of communication (Table 2), and with the understandings about language use (Table 3). When used with the "Model of Communication" (Diagram 1), these tables provide a broad framework of communication which teachers can use to recognize students' linguistic abilities and support growth.

While guiding growth in communication processes and skills may seem challenging to many teachers, it is really a natural part of effective instruction. The next section outlines strategies for incorporating communication processes, understandings, and skills across the curriculum, K-12.

Table 3

Understandings Associated with Communication Acts

1. A language is a system of symbols, verbal and nonverbal, which is created and used by a group of people.

2. Language is used to think, to learn, and to communicate.

3. Language is used for varying communicative functions: controlling, feeling, imagining, ritualizing, and informing.

4. Language functions are carried out through communication acts, that is, through verbal (oral or written) and nonverbal/visual exchanges used to fulfill specific communicative intentions with specific audiences.

5. Most communicative acts involve more than one language function, although there may be a predominant function.

6. The same idea or meaning can be represented symbolically in varying ways: oral, written, and visual/nonverbal language, including mime, creative drama, literature, theatre, journalism, debate; visual arts; sculpture; dance; music; architecture; and electronic media.

7. The features of the medium of communication affect the message and its interpretation.

8. Communication acts are varied by the composer to fit intention, mode, audience, and situation. The comprehender uses these factors to interpret the intended meaning.

9. Communication requires that composer and comprehender cooperatively engage in the construction of shared meaning.

10. Most communicative acts are performed intuitively; however, a mature language user can consciously construct and interpret messages using understandings about language and communication processes.

11. All communication processes share common features: use of thinking skills to conceptualize and interpret messages; use of symbols to represent ideas; and the relationship of composer, comprehender, and subject.

12. Many uses of communication require use of specialized communication skills, including study in various subject areas and various career choices.

Table 4

Interdependent Skills Which Support Communication

Thinking: attending, concentrating, perceiving, observing, comparing, understanding logical relationships, relating sequentially or categorically, classifying, interpreting, synthesizing, summarizing, sensing problems, asking questions, creating hypotheses, predicting outcomes, drawing inferences, drawing conclusions, generalizing, testing validity, identifying assumptions, judging based on evidence or criteria, detecting fallacies in reasoning, discriminating between opinion and fact, planning, making decisions, speculating, anticipating, imagining, generating new ideas, elaborating, appreciating, remembering, reflecting

Communication: the interactive process of composing and comprehending meanings

- **composing:** the recursive process of conceptualizing and conveying a message which often involves incubation and revision as a message is shaped to fit intended purpose, audience, and situation
- **comprehending:** the re-creation of a message by giving attention, perceiving symbols and responding to them, interpreting to shape meaning and attach personal significance, and evaluating and applying the derived message

Discoursing Skills: message formulation/interpretation sensitive to function, subject, and sender-receiver relationship

Communicative Functions: the intended purpose(s) of a communication act, including controlling, expressing feelings, imagining, ritualizing, and informing

- **controlling:** attempts to influence others or respond to the control language of others
- **feeling:** expression of feelings or response to the feelings of others
- **imagining:** attempts to relive or prelive an experience, real or vicarious; to project; or to wonder or to respond to imagining of others
- **ritualizing:** attempts to initiate or maintain social interactions or to carry out social/ritualistic conventions or to respond to ritualizing acts of others
- **informing:** attempts to conceptualize, convey, or seek information or to respond to such attempts by others

Audience: the intended receiver(s) of a communication act, including self as the first audience, those in direct, face-to-face interaction, or an inferred audience

Flexibility: varying features used to communicate messages in—

- **language:** selection of the linguistic system used to communicate (e.g., English, Spanish, mathematical symbols, computer language)
- **dialect:** systematic variations in language used by a group of persons (e.g., ethnic, geographic, political, occupational)
- **register:** style differences suited to situation or use (formal, informal, intimate)
- **mode:** the communication channel(s) used—thought, oral (speaking, listening, nonverbal expression), written (reading, writing), and visual (graphic, non-alphabetic)

Table 4, cont.

Fluency: spontaneity or rapidity in forming or reforming messages, including conceptualizing or creating ideas; and fluidity with syntax, meanings, and expression

Feedback and Self-Monitoring Skills: interpreting and responding to the form and effect of elements of communication both in self-communication and in interaction with others; ability to vary messages based on perceived response, either anticipated or received

Confidence: ease and assurance in communication

Oral,* Written, and Visual Performance Skills:

	Oral	Written	Visual
Semantics: Meanings and meaning relationships of			
Words	X	X	X
Signs and symbols			X
Nonverbal language	X		
Visual elements		X	X
Syntax: Patterns for arranging and combining			
Sentences and clauses	X	X	
Coordinating	X	X	
Subordinating	X	X	
Embedding	X	X	
Design elements			X
Unity (size, intensity of color, centering, nonconformity)			X
Balance (symmetry, contrast of light and dark)			X
Rhythm (repetition)			X
Phonemics			
Vowels and consonants	X		
Intonation (patterns of pitch, stress, pause)	X		
Nonverbal			
Body movement (gesture and body posture and orientation)	X		
Facial expression and eye contact	X		
Use of personal space	X		
Vocal cues (volume, tone, rate, etc.)	X		

* *Note that the oral mode is defined to include speaking, listening, and nonverbal expression and their interpretation.*

Table 4, cont.

	Oral	Written	Visual
Graphemics			
Spelling		X	
Handwriting		X	
Capitalization		X	
Punctuation			
Format conventions (typical and specialized page arrangements, margins, indentation and paragraphing, titling, figure or numeric representation, underlining, bold or italic print, etc.)		X	X
Visual elements (line, color, shape, texture)		X	X
Locational Skills			
Library skills		X	
Reference sources		X	
Within book aids (title page, table of contents, index, chapter organization, print, headings, etc.)		X	X
Scanning and skimming		X	X
Bibliographic skills			
Bibliographic form to locate and cite sources		X	X
Electronic databases		X	X
Technologic media			
Awareness of the communication elements various media use	X	X	X
Use of media elements to compose and comprehend messages	X	X	X
Sensitivity to the effects of the medium used to convey a message	X	X	X

Strategies for Incorporating Communication

Learning to Communicate: Communicating to Learn

Learning and knowing require the use of oral, written, and visual/nonverbal symbols to represent experiences and ideas.

By manipulating symbols, learners actively construct understandings and make meanings real and personal. Therefore, effective communication is essential to instruction in all curricular areas at all levels. The quality of learning and teaching depends on the quality of classroom communication. Thus, all teachers need to develop strategies for using talking, listening, writing, reading, and communicating visually to learn.

Teachers who effectively support students' use of language for learning need to recognize that interaction in learning is characteristic both of young children and of older students in natural settings. Students are innately social beings who collaborate to learn and to carry out tasks. Observing playground activities at an elementary school, middle-schoolers building a rocket, or high school-aged students fixing a car attests to this. Unfortunately, in many schools the environment has somehow become one that precludes or punishes these natural learning processes and instead emphasizes silence, competition, and display of transmitted knowledge to the teacher. As teachers, we need to create an environment that supports students' natural desire to explore and to know, while also using instructional strategies which are effective in supporting the use of communication to learn. Wells (1986) expressed this point beautifully in *The Meaning Makers: Children Learning Language and Using Language to Learn.* He concluded:

> We are meaning makers—every one of us: children, parents, and teachers. To try to make sense, to construct stories, and to share them with others in speech and in writing is an essential part of being human. For those of us who are more knowledgeable and more mature—parents and teachers—the responsibility is clear: to interact with those in our care in such a way as to foster and enrich their meaning making (p. 222).

Teachers need to create an environment that supports students' natural desire to explore and to know.

The stories that learners must construct are their individual understandings of situations, events, or sets of facts. This "knowledge cannot be transmitted. It has to be constructed afresh by each individual knower on the basis of what is already known and by means of strategies developed over the whole of that individual's life, both outside and inside the classroom" (Wells, p. 218). Wells has demonstrated "that the best way in which adults can help them to learn is by giving them evidence, guidance, and encouragement" (p. 215). He called this the guided reinvention of knowledge, "in which the teacher aims to facilitate learning rather than to direct it" (p. 219).

This section outlines procedures teachers can use to facilitate the use of language for learning across the curriculum. It will explore strategies such as those used by our teacher, T, to guide growth in communication abilities necessary both for in-school use and for lifelong learning. The students in that classroom may have seemed unusually adept in the use of communication and group-learning processes. Their teacher had used a combi-

nation of incidental and direct instructional approaches to facilitate the students' natural ability to use language for learning. A closer look at these strategies and their implementation in one classroom will help teachers in all curricular areas and at all instructional levels to identify ways to enhance communicative competence.

Principles of Learning and Teaching

A number of principles of learning provide the foundation for effective instructional practices. It is helpful to consider these principles in relation to the development of communication processes and skills. Among those most central to guiding growth in using language for learning are:

1. Communication processes, like many understandings, attitudes, and skills, are learned spontaneously through use in a supportive environment in which learners are assisted in reaching their goals.
2. Communication processes are best learned in real-use situations so that the context for learning and using these abilities is similar. Often this in-context teaching will be incidental; that is, it will occur as guidance and support are given indirectly at the teachable moment. When a more generalized need for a communication process or skill is recognized by learners, a direct, in-context skill-teaching lesson or unit may also be used.
3. Learning can be facilitated by supporting communication processes which the learner is not yet able to use independently. A more mature language user or collaborating peers provide a support system, or what has been called an instructional scaffold, to permit use of an ability which the learner cannot yet carry out independently (Applebee and Langer, 1983; Bruner, 1975, 1978; Cazden, 1979, 1983; Lehr, 1985; Searle, 1984). Through this in-context support, the learner is able both to achieve his or her intended purpose and gradually to internalize the communication process or skill being used.
4. Ownership by the learner for the use of processes or skills is critical in both incidental and direct instruction. To have true ownership, the learner must value the goal or the end to which the process or skill is a means. Ownership for isolated skills, as ends in themselves, is difficult to achieve.
5. When supporting the use of communication processes and skills for learning, it can be helpful to guide students to recall and apply understandings and abilities which they have used previously. Examining models which are relevant to the student can also provide a basis for discovery.
6. Learning of complex processes and skills, such as those involved in communication, is not uniform nor steady. As a student attempts to use a new level of ability, previously mastered skills may cause difficulty. Similarly, the context of use may affect a student's level of performance. Such "errors" must be viewed as signs of growth, not as failures. They can be indicators of the leading edge of a student's growth, and thus, indicate where support can best be given.
7. Feedback on the effectiveness of communication processes enhances learning, particularly if the learner collaborates in self-evaluation and if the focus is kept on the purpose for the communication, not on the skills used to reach it.
8. For communication processes to become automatic, they must be used regularly in varying contexts.
9. In developing communication processes and skills across the curriculum, it is best to use the least formal and direct instructional approach possible to meet students' immediate needs.

These principles of learning were evident in the classroom described initially. The teacher expected the students to learn about the objects being explored and to grow in their ability to learn through communicating in various modes.

Incidental teaching and learning were provided for, both in the grouping of the students and in the encouragement and support the teacher gave for their use of communication in all modes. Students were grouped so that each cluster had a mix of abilities in the functions and modes of language which were to be used. Also, the teacher carefully monitored both the observations which the students were making and the communication processes they were utilizing. In this way, an instructional scaffold could be provided for needed communication skills. By providing incidental instruction, the teacher was able to facilitate use of and growth in communication without detracting from the main purpose for the lesson. In fact, this support was critical to the students' success in meeting their goals. These same principles of learning provided the foundation when direct instruction in a communication process or skill was used to facilitate students' use of language for learning. A more complete examination of the instructional strategies which characterize these two approaches, incidental and direct, in-context instruction, will facilitate their use.

Using Incidental Instruction

Instructional Strategies

For communication processes to become automatic, they must be used regularly in varying contexts.

Incidental instruction is in-context instruction that takes advantage of the teachable moment. A real-use situation creates the need for an understanding, process, or skill. Learning is embedded in the use situation and does not overshadow it. Several instructional strategies are central to effective incidental instruction. They are:

1. Incidental instruction is highly individualized. It focuses on the immediate need of an individual or a group as they use a communication process or skill to learn.
2. When a need is identified, the teacher's role is to facilitate the student's achievement of his or her primary goal, while at the same time, guiding growth in the incidental ability.
3. Guidance and support in the communication process or skill are kept incidental to the purpose for using it.
4. Support in use of the skill is provided at the teachable moment; that is, the moment when the learner perceives the need for the skill or can be guided to recognize ownership.
5. The intended learning outcomes of incidental teaching are limited to the immediate level of need for the skill and to the developmental level of the learners.
6. The teacher must select the incidental teaching strategy best suited to the learners and the situation. Two types of incidental teaching strategies are:
   a. providing an instructional scaffold to permit the student to use the process or skill to meet the immediate need without conscious awareness focused on its use; and
   b. guiding student(s) to state understandings or procedural guidelines to follow in the use of a communication process or skill to meet their goal in a particular situation without overshadowing or interfering with the ongoing activity.

Using Instructional Scaffolding

The decision as to which incidental teaching strategy to use in a given situation is based on the teacher's judgment of the primary needs of the student(s). For example, when T recognized that the group of students described earlier was having difficulty exploring ideas because of the actions of one student, it appeared best initially to collaborate with the group sharing to guide and support the students who were using language effectively to inform and to question. (See p. 7 and p. 16.) Without calling any attention to the communication itself, T was able to model effective dialogue strategies and to encourage and support their use by the group. By addressing the student who was attempting to share ideas, by listening carefully, and by seeking to know more, T modelled effective discussion strategies for the students. This provided the necessary instructional scaffold to permit them to continue sharing and exploring their observations of the objects.

Instructional scaffolding, which can be used in either individual or group-oriented instruction, was successful because of T's preparation. As Applebee and Langer (1983) suggest, a teacher using instructional scaffolding "must a) determine the difficulties that a new task is likely to pose for particular students, b) select strategies that can be used to overcome the specific difficulties anticipated, and c) structure the activity as a whole to make those strategies explicit (through questioning and modelling) at appropriate places in the task sequence" (p. 169).

In practice, the two types of incidental teaching strategies will blend naturally.

In discussing instructional scaffolding, Applebee and Langer did not distinguish among types of incidental instruction based on the degree of conscious focus on the process or skill, itself. Therefore, their last strategy may be more appropriate to the second type of incidental teaching, guiding students to state procedural guidelines to follow. Anticipating students' needs, planning strategies that can be used to support them, and modelling are features of instructional scaffolding which T used in supporting students' use of collaborative talk. However, questioning to make strategies explicit would lead to the second type of incidental teaching, described below. In practice these two incidental teaching strategies will blend naturally.

Guiding Students to State Procedural Guidelines

Had providing an instructional scaffold not been effective, T could have used the second major approach to guide incidental learning. This involves guiding students to recognize the need for the process or skill; to discover how to use it by recalling prerequisite skills or examining models; and to state and apply procedural guidelines concerning using the process or skill in a particular situation without interrupting the ongoing activity.

Let's pick up the classroom scenario to see how this approach is used. Notice how T guides recognition of the need and discovery of effective strategies to use in a discussion to share information without taking students' attention away from the ongoing discussion. (Recall that the teacher is labelled T; students are labelled A, B, and C.) T has interacted with the group as described earlier. However, as T continues to monitor the group, student A soon begins to domineer and criticize again. T returns to the group. The dialogue that takes place is in the left column, while the instructional strategies that T is attempting are in the right column.

Dialogue		Instructional Strategies
T:	What new observations have you shared since I joined you last?	Exploring students' perception of their progress
A:	I keep trying to tell them, but they don't listen.	
B:	Guess who's not listening!	
C:	I tried to tell them about what I noticed.	
T:	It seems that you are having difficulty. Can you help to figure out what the problem is?	Eliciting recognition and personal ownership of the problem
C:	Well, instead of telling each other what we saw, we're arguing.	
T:	Do you all agree with that? (Students nod.) O.K., let's see if you can figure out what will help. Let's first see if you agree on why you are talking together.	Seeking personal commitment to the problem and its solution Building commitment to the activity for which the skill is used
A:	Well, those objects were pretty interesting to look at.	
T:	Do you suppose you all discovered the same things?	Enhancing need for the skill
B:	I didn't notice what C said.	
T:	So if you want to share your information, what do you need to be able to do?	Formalizing their ownership for the activity and the skill
C:	We need to let one person tell something they noticed and then other people talk about that, and then the next person can tell something.	
T:	If you are going to have a discussion to share your ideas, that is one guideline that can help. A, can you think of another guideline that we've used before?	Recognizing recall of a previously used skill and modelling use of questions to explore ideas in a discussion
A:	Not to argue.	
T:	What can you do if you disagree or don't understand?	Eliciting recall of other previously used abilities
A:	Well, you could ask them to explain.	
T:	Yes, what else could you do?	
C:	Like I said, we should take turns.	
T:	So when you continue with your discussion, you've said that you want to take turns sharing, listen to each other's ideas, question if you don't understand, explain more if someone asks you, and not criticize. Will you try to follow those ideas and I'll check back with you later to see what observations and questions you have ready to share with the class.	Formalizing students' statement of procedural guidelines for the process to be used and seeking their commitment to try them Offering encouragement and continued support; reinforcing commitment to the purpose for the activity

In this interaction, T used several strategies that are important to incidental learning. First, the focus of attention was kept on the communication process that was being used within the particular activity (discussion to share observations). The focus was limited to the specific needs which the students demonstrated at that time. In this way, students were able to recognize the need for the skill and establish ownership. Further, since the focus was limited to their immediate needs, T was able to guide discovery without interrupting the ongoing activity.

A second important strategy was involving the students in discovering how to carry out a discussion, rather than "telling" them what to do. T knew that the students had engaged in discussions before, both in and out of school. Thus, they could use their experience as a basis to state guidelines for an effective discussion. T used strategies to make these procedures conscious and applicable to this communication situation. T also effectively modelled the communication acts that are essential in a discussion to share and understand. T listened carefully to students' suggestions, asked questions to clarify, and summarized understandings. (See Table 1.)

Finally, T immediately prepared the students to apply (practice) what they had discovered in a real-use situation for which they had a commitment. T also offered support and encouragement, while making the students' responsibility to the other class members clear. The outcome of this discussion mattered.

In this situation, T was able to use the students' interest in the objects to establish recognition and ownership for their need to discuss more effectively. Also, T was able to draw on students' experience as a basis for recalling prerequisite abilities.

T was also able to model the skill while interacting with the students; that is, T was able to use discussion to learn about discussing. In attempting to facilitate use of other communication skills through incidental teaching techniques, a teacher might need to consider other techniques to build awareness of the need for a communication process or skill. Other bases for discovery might be needed, such as familiar examples (models) of the process or skill which students could examine. The decision as to which techniques to use depends on the nature of the skill or process being used, the students' awareness of the process or skill, their present level of ability with it, and the teacher's judgment concerning the primary goal for a specific student at that time.

Individualizing Incidental Instruction

Individualization is essential to both types of incidental instruction. In this classroom interaction T needed to be prepared to support students who chose to use visuals to record observations in their learning logs. Choice of visual elements and words (semantics), design elements (syntax), and use of visual elements (graphemics) are performance skills which support communication through use of visuals to inform. (See Table 4.) In this situation T might interact differently with at least five different types of students:

1. **The student who is not ready to focus on a particular process or skill.** T observes a student who is struggling to clarify and compose his or her intended meaning. Even though this student is also having difficulty with aspects of visual/graphemic representation, T gives attention to the thinking and composing abilities necessary for making meaning. This student is not ready initially to give attention to the presentational aspects of visual communication. T guides the student to defer concern for these matters, at least until a personally satisfying meaning has been drafted.

2. **The student who is capable with guidance and support.**
T observes a student who expresses concern about his or her drawing while drafting. T knows from experience that the student is able to communicate meanings visually with an instructional scaffold. T first asks the student to summarize the ideas he or she is trying to convey. Next, T asks the student to describe one or two techniques that can help the audience understand. In this way, T provides a scaffold for the activity.

   The student is guided to clarify the intended meaning and then to think about how to communicate it most effectively. T suggests that the student first complete a draft and then find a partner to share with in revising. When the student is ready to revise, T encourages the student to let the partner tell what he or she understands from the visual. This feedback permits the composer to check whether the intended meaning has been communicated. It provides the student with a basis to revise design elements and builds confidence in use of visual communication. After sharing between the partners, T reinforces the student's internalization of the communication processes involved by having him or her serve as a responder for another student.

3. **The student who is capable, but unsure.**
From previous classroom interactions, T knows that this student is able to communicate meanings through visuals. When the student expresses worry, T asks him or her to explain what things are important to think about in using a visual to inform others (i.e., to state procedural guidelines to follow). The student identifies three elements: thinking about what to include in the diagram to show important ideas, using colors, and selecting captions to clarify meaning and capture attention. T responds positively and encourages the student in undertaking the process.

4. **The student who is capable of using the process or skill, but does not.**
Building awareness of the importance of the process or skill is critical for this student. This requires that the student, first, value the reason for communicating. Being sure that students do have real purposes and real audiences is essential.

   With such a student, T serves as responder to the draft or selects a student who can effectively communicate his or her understanding of the meaning expressed. Letting the student know which aspects of the intended meaning the audience received and which were misunderstood helps the student recognize the need to clarify the way in which the ideas are presented. T then asks the student to summarize plans for editing, using questioning strategies that highlight the communication processes and skills that are important in this use of visuals.

5. **The student who is able to move beyond the usual level of performance in the communication process or skill.**
Here T needs to judge the importance of an increased level of proficiency in the process or skill at this time. The student's interest, the amount of use made of the skill, and the ways in which the student might otherwise use this instructional time are all factors. If T observes a student with an unusual ability to combine elements of visual and verbal communication to inform, this student might be given additional opportunities to use this mode of communication in group projects or might serve as a helper to other students. Alternatively, T might decide to encourage this student to explore other ways to communicate information in order to broaden his or her abilities.

Being sure that students do have real purposes and real audiences is essential.

Using Direct, In-Context Instruction

When to Use Direct Instruction

At times, teachers may find that incidental teaching techniques are not the best choice for developing communication processes or skills that students need for learning. Then, an in-context, direct lesson or unit may be planned to develop specific communication abilities. An in-context lesson is a lesson taught within an ongoing activity to develop a process or skill which is necessary for successful completion of the activity. An in-context unit is a series of lessons designed to develop a process or skill required to carry out a planned learning activity.

A direct instructional approach is most often chosen when one or more of the following conditions exist.

1. **Many students have a similar type and level of need for growth in a communication process or skill.**
   A math teacher who notices that many students fail to remember specifics in orally presented problems uses direct instruction to help the students discover strategies for identifying and remembering information and for translating that information into the algorithm necessary to solve the problem.
2. **The communication process or skill has general application in the curricular area; that is, students will need to use the skill many times in the future.**
   A science teacher who plans to have students use learning logs to record observations from experiments throughout the year introduces this skill through direct instruction to enhance both effectiveness and efficiency of instruction. Further, the direct lesson or unit provides a base for later incidental teaching needed to meet individual needs.
3. **The communication process or skill is important in this curricular area, both for schooling and in uses outside of school.**
   A social studies teacher who makes frequent use of discussion groups determines that a direct lesson or unit on this communication skill is an important learning outcome because of its frequent classroom use and because of its importance in a democratic society. Similarly, a vocational education teacher uses direct instruction to develop interviewing skills before their use to gather information on specific careers, knowing that use of interviewing strategies is vital in job seeking and in most careers.

Teacher judgment is required in determining whether to use a direct lesson in the context of the ongoing activity or to use a unit which is scheduled either before the anticipated use or along with it. Earlier it was suggested that teachers use the least formal and direct instructional approach possible to effectively meet students' needs. Following this principle, a teacher will select an in-context lesson when the students' needs are specific to a given application and when the students' level of ability is close to the level that is needed. A unit is used when needs are broader or when the teacher wants to demonstrate the generalized application of the process or skill. It is important to recognize that the in-context lesson is a diversion from the instructional experience within which it is taught. If more than one or two such lessons are needed at one time to meet students' anticipated or observed communication needs, then a unit approach is probably warranted.

Timing of an in-context lesson or unit is important. Ownership is enhanced if the instruction can be scheduled after the need has become apparent to the students. Similarly,

if application can immediately follow instruction, internalization of learning will be enhanced. When an in-context lesson is to be used, it is best to involve the students in recognizing their needs and then provide instruction. When a unit is needed, scheduling may present a challenge. An elementary teacher in a self-contained classroom often can time instruction so that a unit on the communication process which is needed for a content area activity can be taught as part of language arts, while the curricular activity for which it is needed continues. The two units can then merge when students make use of the skill. Departmentalized elementary, middle-school, and secondary teachers may be able to split an instructional time block so that the two units are taught concurrently. If that is not possible, it may be necessary to preview an upcoming activity in order to create ownership for a communication process or skill, carry out the unit to develop the skill, and then initiate the activity for which the skill is needed.

Instruction in communication processes and skills must focus on entire processes or identifiable parts within them, not on isolated subskills.

Instructional Strategies

Several instructional strategies are important to both the direct, in-context lesson and unit.

1. Student ownership for the process or skill must be developed. This is best accomplished if students are using the skill either directly or through simulation, for example, role-playing use of an interview to seek information before actually conducting the interview.
2. Instruction in communication processes and skills must focus on entire processes or identifiable parts within them, not on isolated subskills. In preparing to give reports to inform others, attention is given in a unit or lesson to preparing the audience to listen, but not given to articulation skills.
3. Students should be guided to discover how to carry out a process or skill by engaging in the process, responding to models, and applying prior abilities. Real, whole-language experiences involving oral, written, and visual communication are used to guide discovery.
4. Students are helped if they are guided to state generalizations or guidelines which they wish to follow. These guidelines serve as a basis for application and for self-evaluation.
5. Following direct instruction on a communication process or skill, incidental teaching techniques are used to guide application and to promote internalization.

Using a Direct, In-Context Lesson

These principles of direct instruction can be illustrated by returning to the classroom example described earlier. T plans to involve the students in a series of learning activities that will require use of visuals to record and share information. In previous experiences in which visuals have been used as a source of information, T has observed that students often fail to notice details. They also fail to relate the information which is presented in labels or captions to information presented visually. T decides that a direct, in-context lesson will help students in composing visuals to inform and in comprehending the information in the visuals their peers develop. In order to increase ownership, T initiates the lesson when the students have decided to create visuals but have not yet begun to draft them. Objectives for the lesson include awareness that the same information can be presented verbally and visually; awareness that sometimes the audience is aided by use of visuals and words together; ability to decide when to use visuals alone, words alone, or visuals and words together; ability to select and create visual elements and to design them to convey an intended meaning; ability

to create labels or captions which help to focus attention and clarify meaning; and ability to interpret meaning from a visual/verbal display.

In preparing for the lesson, T selects three visuals related to the topic the students are working on, but is careful not to select ones that are on the same question that any student has selected. One of these visuals lacks clarity in visual presentation, one has an effective visual presentation but is poorly labelled, and the third is effective both in visual and verbal presentation.

Incidental teaching techniques will foster internalization of these concepts and abilities.

T begins the lesson by recalling that students have talked about using visuals in sharing their information. T asks students to talk in pairs to list times when they have used visuals as a source of information. After a few minutes, T asks the students to share. Included in their composite list are ads, pictures in books, directions for games or equipment, signs, and labels. T points out that in many of these examples visuals and words are combined to inform and asks students to talk about why this is done. Their ideas include that it is a way of getting attention, that there is a need to see what you are reading about, and the fact that some information can be expressed more clearly through both visuals and words than just one mode.

T then asks the students if they can think of a time when they have had difficulty understanding a sign or picture. Several students cite directions for games and information in textbooks. T then asks what problems they think they may face in working on their visuals or in learning from the visuals others have made. Problems include deciding what to include in the visual, what labels to use, and how to know what is important in "reading" someone else's visual.

T suggests that students look at some visuals to see if they can develop guidelines for how to read information presented both visually and verbally. T notes that this will help them to have ideas about how to compose an effective visual to inform others.

T first presents the visual that effectively presents information through both modes. Students are asked to talk in pairs about what they can learn from this visual and how the author was able to convey that meaning. After partners have had time to form ideas, T begins discussion. Students notice that the visual is clearly presented, that color is used to make the object look real, and that the visual indicates the size of the object. T asks them to identify important information that is not presented visually. Students mention names of parts, but are quick to note that the captions tell that. T then guides the students to examine the two less-effective visuals. After students identify their strengths and weaknesses, T asks what they think the creator of the first visual did that the others did not. As students offer ideas, T lists them for later reference. Their generalizations follow.

1. Decide what information you want to give your audience.
2. Think about how a visual could help the audience understand.
3. Prepare a draft of the visual, trying to clearly include the important information.
4. Think about a caption or title to get the audience's attention. Think about how words could be used to label or explain parts of the visual and add them.
5. Check your draft to see if it includes the information your audience needs and if it is easy to understand.
6. Make any changes you decide are helpful and then make a final copy if you need to.

T concludes the lesson by having the students look at the information they have gathered and list parts they think can best be presented with a visual. They plan to begin work on the visuals in the next lesson. T will encourage students to refer to their list of guidelines for creating visuals as they work. Incidental teaching techniques will foster internalization of these concepts and abilities.

Using a Direct, In-Context Unit

T uses a direct, in-context unit to develop students' ability in a communication process or skill less frequently than incidental instruction or an in-context lesson. One occasion when T used a unit approach was in introducing the use of learning logs. A learning log is an account of progress, record of activity, description of observed changes, expression of responses, or collection of ideas which is kept on a systematic basis. Sometimes called content journals, learning logs have been used successfully in all areas of the curriculum.

T knew that the students had not previously kept learning logs, although they were familiar with the use of personal journals. Because T planned to make regular use of learning logs, it seemed appropriate to involve the students in a unit to explore the purpose of such logs and to develop strategies for their use before an activity in which students would use logs to record observations.

T knew that it was important for the students to be exposed to the use of logs before such a unit in order to develop ownership for learning more about their use. Therefore, T guided the students to keep a class log of their progress in achieving a class goal. Daily entries were dictated by the group during the first week. At the end of the week, each student was given a looseleaf notebook containing the first week's entries and several blank pages. Class dictation continued during the second week. Students were also encouraged to add personal observations in their own logs about their individual progress toward the goal. This built awareness of the function of logs and gave students a basis to identify skill needs. This experience also led the students to suggest that they could keep individual learning logs to record their discoveries about the objects they were examining in the experience described earlier.

When this use of logs was suggested, T initiated the direct, in-context skill-teaching unit on the use of learning logs. To crystallize ownership, T guided the group to talk about how having individual records of their observations could be useful as a source of information as their exploration progressed. Students recognized the value of a log as a basis for discovering features or patterns that might be missed if they were not recorded. T then asked the students if it made any difference what type of entries they made if the logs were to be used to discover relationships. Students were encouraged to consider whether the class log would be useful for that purpose. This led students to decide to explore the characteristics they would want their logs to have since they were to be used as a basis for discovering relationships. T suggested that students examine the features of learning logs kept by others.

Sometimes called content journals, learning logs have been used successfully in all areas of the curriculum.

To guide discovery of characteristics of effective logs, T provided the class with a variety of logs. Students were encouraged to add to the collection. Included were logs of scientific experiments, growth cycles, journeys, ideas for personal writing, and progress in mastering a new skill. Some included specific details, while others recorded personal feelings. Some included labelled diagrams and samples. Some contained specific numeric data, while others contained only general amounts.

In examining the logs, the students were encouraged to consider why they thought the person had prepared it. This activity led them to list two broad purposes for logs: to keep an accurate and detailed account of an experience to provide a basis for drawing conclusions, and to keep a personal record to help one recall an experience. The students classified the logs into these two types.

Next, T asked the students to work in pairs to discover the features that made each type of log effective for its purpose. Students listed the following characteristics of a log that was to be used as evidence for drawing conclusions.

1. A log is kept for a specific purpose. You should decide what the purpose of the log is to be before you start.

2. Entries should be made regularly.
3. Detailed information which fits the purpose for the log is included.
4. Diagrams, pictures, or samples are included when they help to record information.

For a log which is to serve as a personal record, the following characteristics were listed.

1. The log is kept so that the person can remember the experience or can keep a list of ideas.
2. Entries can be made daily or whenever something special happens.
3. Include things that you want to remember, the way things looked, and how you felt about things. Pictures can help you remember.

T next asked students if they thought it was possible for a person to keep both kinds of logs about the same experience. For practice in keeping logs before using them in the planned activity, the students decided to keep both types of logs for an activity of their choosing for the next few days. Time was provided each day for the students to prepare their entries and to share them with a partner. They used the characteristics the class had identified to create and respond to the logs. During this time, T used incidental teaching techniques to help students refine their use of logging skills.

If students are to become independent, lifelong learners, they must be supported in their use of oral, written, and visual communication to carry out a full range of language functions with diverse audiences.

When the students were ready to begin examining the objects to find relationships, T guided them to identify the type of log they should keep. As daily entries were made, T continued to provide an instructional scaffold for students who needed support with the skill. Gradually, as students became more independent in their use of learning logs to record observations, this support was withdrawn.

To help students recognize that they had developed a useful learning tool, T guided them to discuss the value of their logs in successfully completing the activity. Students also were encouraged to list other activities, both in and out of school, in which logs could be useful. They considered the type of log they would want to keep for each purpose. In later weeks, T encouraged use of learning logs whenever it seemed appropriate in order to encourage students to value their use.

Making Communication Work in Your Classroom

Throughout this guide we have followed T, a representative of the many effective teachers at all levels and in all teaching areas who know the excitement of collaborating with students in learning. Such teachers know that if students are to become independent, lifelong learners, they must be supported in their use of oral, written, and visual communication to carry out a full range of language functions with diverse audiences. These teachers follow the four principles which Wells (1986) suggested that adults use to facilitate language development:

- To treat what the child has to say as worthy of careful attention.
- To do one's best to understand what he or she means.
- To take the child's meaning as the basis for what one says next.
- In selecting and encoding one's own message, to take account of the child's ability to understand—that is, to construct an appropriate interpretation. (p. 218)

Wells was concerned with providing an environment at home and at school that would facilitate children's ability to make meaning through language. His principles apply to the respect and support which students of all ages deserve as they learn to communicate and communicate to learn across the curriculum. As all teachers become more aware of the

central place which communication processes have in learning across the curriculum, they will develop facility in the use of strategies to collaborate with students in learning. As teachers begin this journey, additional examples of techniques for integrating language across the curriculum may be helpful. Selected sources are grouped around the central themes in this section: language across the curriculum, incidental and direct instruction, and instructional scaffolding. Annotations for each citation are included in the main bibliography.

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Analyzing the Infusion of Communication

Strategies for Analyzing the Use of Communication Abilities and Understandings

Effective use of communication processes and skills is essential to learning and interaction in all curricular areas. Communication across the curriculum depends on each teacher's awareness of and commitment to the development of communication processes. Strategies for incorporating communication across the curriculum were recommended in the previous section. In order to effectively utilize those strategies, individual teachers need a systematic way to identify the communication abilities and understandings required in the learning experiences they now use. Teachers also need a systematic way to monitor their students' communication abilities and needs in order to provide for growth. Finally, teachers need a way to assess whether the communication processes they now use in instructional activities most effectively facilitate learning in their specific curricular areas.

Teachers need a systematic way to identify, monitor, and assess communication abilities and understandings.

Teachers can use the "Form for Analyzing Communication Abilities and Understandings Across the Curriculum" (Diagram 2) to identify, monitor, and assess the communication abilities and understandings used now in student learning experiences during a given curricular segment. This analysis can be for a time segment (week, month, quarter, semester) or for an instructional segment (a learning activity, a lesson, a unit within a course, a course). The following steps should be used when completing Diagram 2.

1. In the first column, briefly describe the learning experience that is to be analyzed.
2. In the second column, identify the communication processes and skills required in the learning experience. Diagram 1 and Table 1 can be used to identify the individual capacities, the language functions and communication acts through which they are carried out, the communication mode(s), and the audience(s) involved in the learning experience.
3. In the third column, list the communication abilities and understandings that students use successfully (observed) and the skills that need support (needed) in order to enhance communicative effectiveness. Tables 1 through 4 can be used to identify communication abilities and understandings needed in a learning experience.
4. In column four, list extensions in the use of integrated communication processes and skills (functions, modes, and audiences) that can enhance learning. Diagram 1 and Table 2 can be used to identify potential uses of oral, written, and visual communication.

Diagram 2
Blank Form

Form for Analyzing Communication Abilities

Teacher _____

Level _____

Directions: Briefly describe the learning experiences used in Column 1. In Column 2, use Diagram 1 and Table 1 to identify Individual Capacities, Language Functions and Communication Acts, Mode(s), and Audience(s).

Column 1 **Brief Description of Learning Experience**	**Column 2** **Individual Capacities, Language Functions and Communication Acts, Communication Mode(s), and Audience(s)**

and Understandings Across the Curriculum

Course/Area/Unit _____

Dates or Time Span _____

Use Tables 1 through 4 to identify observed and needed communication abilities and understandings in Column 3. List extensions to enhance learning through communication in Column 4.

Column 3 Communication Abilities and Understandings		Column 4 Extensions to Enhance Learning through Communication
Observed	Needed	

Diagram 3
T's Entry for Scenario on Pages 7 and 16

Form for Analyzing Communication Abilities

Teacher T

Level Any

Directions: Briefly describe the learning experiences used in Column 1. In Column 2, use Diagram 1 and Table 1 to identify Individual Capacities, Language Functions and Communication Acts, Mode(s), and Audience(s).

Column 1 **Brief Description of Learning Experience**	**Column 2** **Individual Capacities, Language Functions and Communication Acts, Communication Mode(s), and Audience(s)**
Small-group examination of objects as a basis for questioning and discovery.	Use perceiving, manipulating, thinking, talking, feeling, wondering. Labelling, describing, questioning, agreeing, disagreeing, wondering, collaborating, addressing, giving and taking turns. Oral mode. Small group.

and Understandings Across the Curriculum

Course/Area/Unit Any

Dates or Time Span x/xx/xx

Use Tables 1 through 4 to identify observed and needed communication abilities and understandings in Column 3. List extensions to enhance learning through communication in Column 4.

Column 3 Communication Abilities and Understandings		Column 4 Extensions to Enhance Learning through Communication
Observed	Needed	
Ability to notice properties. Ability to describe properties. Ability to associate properties. Ability to question own observations. Willingness to explore. Confidence to share. Awareness of roles in communication.	Difficulty in seeking and giving turns. Difficulty sharing perspectives. Difficulty questioning another's ideas without criticizing.	Use of learning logs to record individual observations and questions after peer interaction (written and visual modes). Oral interaction to share written and visual logs. Whole-group listing of discoveries and questions. Planning for further study.

Teachers can use the analysis form to determine the range of communication abilities and understandings which students are required to use in their instructional programs. Examination of entries in columns 1 and 2 over a time span or an instructional segment can be compared to Diagram 1 and Table 1 to determine whether the range of communication functions, modes, and audiences being used is appropriate to the learning outcomes in the curricular field and to students' growth in using communication to learn.

The communication analysis form also provides teachers with a tool for monitoring students' abilities and needs (columns 2 and 3). It can be used either to anticipate and prepare for skill needs in a planned activity or to analyze an instructional experience which has just been completed. Diagram 3 shows the entry that T made while planning for the activity in which students were to share their observations of objects. (See p. 7 and p. 16.) Anticipation of the language competencies that were required for this activity prepared T to observe the students' communication processes as they interacted. This observation permitted T to identify both the abilities that students used successfully and those abilities for which they were likely to need support (column 3). By anticipating skill needs, T was able to successfully use incidental teaching strategies to support learning through communication during the activity. However, when analysis of a planned experience indicated that students' communication needs could not easily be supported through incidental instruction, T used direct instruction, as was described in the strategies section. (See pp. 30-34.) The communication analysis form can also be used as a planning guide to enhance integration of communication across the curriculum (column 4). In planning for the learning experience shown in Diagram 3, T initially only planned to have students share their observations orally in small groups. However, before the lesson T used the "Model of Communication" to assess these plans. T decided that learning would be enhanced if students recorded observations in their learning logs and shared those observations before the class discussion (column 4). These extensions integrated the visual and written modes, extended the audience, and built confidence for the class discussion. When these extensions were identified, T used another copy of the form to list them as learning experiences (column 1) and analyzed them, as well.

Concern for communication by teachers across the curriculum is intended to facilitate learning in each curricular area, not to prescribe it. This means that the communication processes and skills used by groups of students in specific curricular areas must grow from the instructional activities in which they are involved. They must be tailored to students' individual abilities and needs. Therefore, the sequence of communication processes and skills can only be determined by the teacher(s) who are in direct interaction with a group of students. The imposition of a predetermined sequence of communication skills would interfere both with instructional outcomes of specific curricular areas and with effective language learning. By systematically analyzing the communication processes being used, teachers will be prepared to monitor their students' progress and to meet their needs. In fact, systematic use of the analysis form will provide an anecdotal record of the communication experiences and abilities for a group of students. It can also be used for individual students in the group.

Initially, use of the form will require conscious analysis and reference to Diagram 1 and Tables 1-4. Soon, however, the nature of the language functions and the communication acts that are used to carry them out will be internalized so that this becomes a natural way of thinking about the teaching-learning process and of monitoring students' progress in using language to learn. To facilitate use of the form for analyzing communication abilities, the appendix contains two additional scenarios and their accompanying analyses. The first (Diagrams 4 and 5) is for T's use of learning logs and small-group sharing prior to whole-class discussion, which was described earlier (p. 7). The second (Diagrams 6 and 7) involves an

instructional experience common to many curricular areas and teaching levels—use of a guest speaker. Teachers are encouraged to use these scenarios for practice by reading the scenario, completing the form to analyze communication abilities and understandings involved, and comparing their analyses to the ones provided. It will be helpful if teachers can discuss their analyses with colleagues before comparing them to the analyses provided. Additional directions are contained in the appendix.

After this initial practice with the form, teachers should begin analysis of the communication abilities required in learning experiences from their own classrooms. At first, it will help to focus on a single learning activity within a lesson, rather than on a lesson or unit. Also, in early uses to monitor student progress, it will be helpful to focus on a single student or small group of students rather than on the whole class. The scope of the instructional segment and the number of students to be analyzed can be extended as teachers learn to use the form.

Using the Communication Analysis Form to Promote Articulation of Communication

The communication analysis form can be used by either one teacher or by a group of teachers to infuse communication across the curriculum. It can be a means to ensure that at each level and in each instructional area students are provided experiences with diverse functions of language, with differing modes of communication, and with diverse audiences so that they continually grow in the use of communication processes needed for learning. Teachers in similar teaching areas and levels can share results of their communication analyses. Such a compilation can provide a basis for building vertical and horizontal articulation of communication processes and skills. Special attention can be given to communication skills unique to specific subject-matter areas and to careers in those fields. For example, if a group of teachers determines that specific communication processes are needed for learning activities in their subject-matter area, they can jointly plan how and at which levels to develop those abilities. Examples include ability to read directions or diagrams in vocational education classes or to interpret word problems in mathematics.

The communication analysis form also provides teachers with a tool for monitoring students' abilities and needs.

Using Analysis to Assess Horizontal Articulation

Horizontal articulation of communication across the curriculum is a concern for teachers at all levels. Whether students at a given level spend much of their instructional time under the guidance of one teacher in a self-contained classroom or whether their instruction is provided by a team of subject-matter specialists, there should be continuity in expectations and experiences throughout a day and a year. Such continuity can only be achieved if teachers are aware of their own expectations and if they coordinate those expectations with colleagues at the same level. To achieve horizontal articulation, teachers at each instructional level within a program should analyze the communication abilities and understandings they use during selected time periods. After each teacher has analyzed his or her instructional experiences, results should be compiled. Teachers can then assess this compilation to determine whether their expectations are reasonably compatible. They can also use Diagram 1 and Table 1 to determine whether students are experiencing the range of language functions and communication acts, integration of language modes, and diversity in audiences necessary to facilitate learning. As teachers share ideas for using communication for learning, they will grow in ability to integrate communication across the curriculum and to support its use.

Using Analysis to Assess Vertical Articulation

Students should experience continuity in program experiences and expectations as they move from the preschool-primary through the middle school/junior high and secondary levels. Analysis of communication can serve as a tool to promote vertical articulation throughout the curriculum. Teachers can share and discuss their compiled results both by subject-matter groupings or departments and as a total faculty. This sharing can be used to identify the need to augment the use of communication processes at specific levels, can facilitate coordination of learning expectations at all levels, and can be a vehicle for sharing instructional strategies. Such dialogue will lead to the realization by the total faculty of common goals and the interdependence of all subject areas. It will also highlight the central place of communication in learning across the curriculum.

Using this Guide and the Communication Analysis Form to Infuse Communication

Table 5 outlines the steps described earlier for use of the communication analysis form to identify communication abilities required in the ongoing learning experiences which a teacher uses, to monitor students' progress, and to enhance the range and effectiveness of communication processes and skills utilized. Steps 1-8 can be carried out by a teacher individually or in collaboration with colleagues. Steps 9 and 10, which focus on horizontal and vertical articulation of communication across the curriculum, require interaction of teachers who share responsibility for the learning of groups of students.

Although Steps 1-8 can be carried out by one teacher, there is much to be gained through collaboration among teachers all concerned with enhancing uses of communication to learn across the curriculum. As a group of teachers discuss the learning experiences in which they involve students and the nature of the communication abilities and understandings involved, new understanding of the learning process and of the strengths of the present curriculum will emerge. Similarly, as teachers discuss abilities which students possess and their perceived needs, skill in diagnosis will result. As teachers share ideas for enhancing learning through language, new life will be given to the curriculum and to those who create it. Just as a theme of this guide has been that students learn best by interacting, so, too, are their teachers empowered as they work collaboratively.

Table 5

Steps for Using this Guide and the Communication Analysis Form

1. Identify and describe the curricular segment to be analyzed (learning activity, lesson, unit, etc.) in column 1.
2. Prior to scheduling the target learning experience, use Diagram 1 and Table 1 to identify the communication processes to be used (column 2).
3. In column 3, identify abilities and understandings that you anticipate students possess (observed) and abilities that you anticipate will require instructional support (needed).
4. For anticipated needs, determine which approach you think will best support your instructional objectives and enhance growth in communication to learn (incidental; direct, in-context lesson; direct, in-context unit) and plan for that instructional approach using guidelines in the strategies section.
5. Identify and plan for extensions to enhance learning through communication. Diagram 1 and Table 2 can be used to identify potential uses of oral, written, and visual communication.
6. During and after instruction, use columns 2 and 3 of the form to monitor uses of communication and to provide for additional needs that emerge through use of incidental teaching strategies and subsequent direct instruction.
7. After the learning experience, use column 4 to record extensions to enhance learning through communication for use when the learning experience is taught again.
8. To consider the range of communication situations with which students have had experience, and to monitor their progress in the use of communication processes and skills, review a series of mapping forms for the group.
9. To improve horizontal articulation of communication across the curriculum, share results of analyses of communication abilities with other teachers at your level, especially those who work with the same group(s) of students.
10. To improve vertical articulation of growth in communication, share results of analyses with teachers who share responsibility for your teaching area(s) at other instructional levels and with the total faculty who share responsibility for students over time.

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This bibliography includes both theoretical and practical sources concerning communication across the curriculum. There has been an attempt to include some sources representing various levels of instruction, K-12, and different curricular areas. Key sources are marked with an asterisk (*).

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Academic Preparation in English: Teaching for Transition from High School to College. New York: College Entrance Examination Board, 1985. (ED 269 812). This is one of a series of six books on basic subjects designed to promote local discussion of curriculum. A follow-up to the College Board's 1983 report, *Academic Preparation for College: What Students Need to Know and Be Able to Do* (ED 232 517), it includes discussion of preparation and outcomes including oral communication, speaking, and reading. Others in the series include The Arts, Arts, Foreign Language (ED 276 293), Social Studies (ED 272 434), Science, and Mathematics. Many include discussion of communication within other subject areas.

Afflerbach, Peter. "Overcoming Children's Reluctance to Revise Informational Writing." ***Journal of Teaching Writing,*** **Vol. 4, No. 2, Fall 1985, pp. 170-176.** Afflerbach addresses the problem of how to motivate revision of papers such as informational reports, which often generate little student interest. He suggests stimulating activities and varied approaches to assigning and presenting topics and gives examples of some successful assignments.

Allen, R. R., Kenneth L. Brown, eds. ***Developing Communication Competence in Children.*** **Skokie, IL: National Textbook Co., 1979. (ED 130 334).** This is an excellent review of literature on the cognitive, social, and communication development of children. It synthesizes data to examine the definition of communication competence and specifies implications for research and instruction.

Allen, R. R., Kenneth Brown, and Joanne Yatvin. ***Learning Language Through Communication: A Functional Approach.*** **Belmont, CA: Wadsworth Publishing Co., 1986.** This book focuses on the purposes of communication and provides an integration of the elementary language arts through communication processes.

Allen, R. R., and Robert W. Kellner. "Integrating the Language Arts," pp. 208-227. In** ***Speaking and Writing, K-12: Classroom Strategies and New Research, **edited by Christopher J. Thaiss and Charles Suhor. Urbana, IL: National Council of Teachers of English, 1984. (ED 247 607).** The authors examine models of integration within language arts and across the curriculum. They suggest a matrix using functions of communication and audience as a basis for generating integrated learning activities.

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*Applebee, Arthur N. *Contexts for Learning to Write: Studies of Secondary School Instruction.* Norwood, NJ: Ablex, 1984. This volume examines a cross-section of the process of learning to write, concentrating on the high school years, grades 9-12. It details the problems students face in learning to write, as well as the instruction they currently receive, and provides a basis for reforming the secondary school curriculum. It discusses writing in various curricular areas including science and social studies.

Applebee, Arthur N. *Writing in the Secondary School: English and the Content Areas.* Urbana, IL: National Council of Teachers of English, 1981. This report details instructional situations in which secondary students are currently learning to write. Applebee suggests directions for improving writing instruction—including a major shift of emphasis in assigned writing.

*Applebee, Arthur N., and Judith A. Langer. "Instructional Scaffolding: Reading and Writing as Natural Language Activities." *Language Arts*, Vol. 60, February 1983, pp. 168-175. (EJ 276 116). The authors discuss a model for teaching reading and writing in which skilled language users provide support for new language activities in context.

Armes, Rose A., and Karen Sullenger. "Learning Science Through Writing." *Science and Children*, Vol. 23, April 1986, pp. 15-19. (EJ 338 029). This article describes an instructional approach which focuses on writing skills as a means of promoting science learning and gives examples of science writing and research activities for grades 2 and 6.

Askov, Eunice N., and Mary M. Dupuis. "Guidelines for Inservice Programs to Teach Reading in Content Courses." *Journal of Teacher Education*, Vol. 30, September-October 1979, pp. 16-18. (EJ 213 560). Teaching methods for the improvement of reading skills in the context of junior and senior high school regular content reading are suggested.

Aulls, Mark W. "Relating Reading Comprehension and Writing Competency." *Language Arts*, Vol. 52, September 1975, pp. 808-812. (EJ 135 881). Based on observations made in classroom teaching, Aulls formulates six propositions about the nature of the relationship between reading and writing that suggest how they are similar yet independent.

*Auten, Anne. "ERIC/RCS: The Ultimate Connection: Reading, Listening, Writing, Speaking—Thinking." *Reading Teacher*, Vol. 36, February 1983, pp. 584-587. (EJ 274 259). Auten examines ERIC materials that discuss the integration of reading, writing, speaking, listening, and thinking skills.

Backlund, Phillip, J. Gurry, K. Brown, and F. Jandt. "Evaluating Speaking and Listening Skills Assessment Instruments: Which One is Best for You?" *Language Arts*, Vol. 57, No. 6, September 1980, pp. 621-627. (EJ 233 979). The authors focus on the need for assessing skills that account for differences between those unique to oral language and those unique to written language.

Backlund, Phillip, J. Gurry, K. Brown, and F. Jandt. "Recommendations for Assessing Speaking and Listening Skills." *Communication Education*, Vol. 31, No. 1, January 1982, pp. 9-18. (EJ 257 625). The authors clarify and develop criteria introduced in the 1980 article.

Bailey, Richard W., and Robin M. Fosheim, eds. *Literacy for Life: The Demand for Reading and Writing.* New York: Modern Language Association of America, 1983. This collection of essays treats world literacy, the relationship of literacy to politics, the uses of literacy in vocations and professions, the problems of literacy in various educational settings, and the teaching of literacy. The essays were originally presented as papers at the conference on "Literacy in the 1980s" sponsored by the English Composition Board that oversees the writing-across-the-curriculum program at the University of Michigan.

*Barnes, Douglas. *From Communication to Curriculum.* New York: Penguin, 1976. This practical approach to teaching demonstrates how the teacher's manner of classroom communication shapes the pupils' learning process and the curriculum. Classroom conversations from various subject areas are analyzed to illustrate inhibiting effects of teaching methods which thwart natural patterns of inquiry.

*Barnes, Douglas, James Britton, and Mike Torbe. *Language, the Learner, and the School.* 3rd ed. New York: Penguin, 1986. The authors explore what we can discover about learning by looking at the language of our classrooms.

*Barr, Mary, Pat D'Arcy, and Mary K. Healy, eds. *What's Going On? Language/Learning Episodes in British and American Classrooms, Grades 4-13.* Montclair, NJ: Boynton Cook, 1982. Thirteen language-rich classroom episodes involving integration of talking, writing, and students' experiences in language arts, science, and social studies are presented.

Barrow, Lloyd H., and others. "Building Bridges Between Science and Reading." *Reading Teacher,* Vol. 38, November 1984, pp. 188-192. (EJ 306 586). Barrow suggests that by using a variation of the language experience approach, teachers can facilitate the learning of both science and reading.

Bechtel, Judith, and Bettie Franzblau. *Reading in the Science Classroom.* Washington, DC: National Education Association, 1980. (ED 204 130). The authors present many practical methods for incorporating reading instruction into the science curriculum without taking time away from teaching content.

Beutler, Suzanne A. "Using Writing to Learn About Astronomy." *The Reading Teacher,* Vol. 41, January 1988, pp. 412-417. Beautler describes a progression of writing activities with cooperative elements used to enable sixth graders to participate in the process of learning by writing.

Beyer, Barry. "Using Writing to Learn History." *History Teacher,* Vol. 13, February 1980, pp. 167-178. Beyer explores uses of writing to deepen an understanding of history.

*Blair, Timothy R., and William Rupley. "ERIC/RCS Report: Incorporating the Arts into Language Arts Instruction." *Language Arts,* Vol. 57, March 1980, pp. 335-338. (EJ 229 983). The authors discuss materials available to the teacher who wishes to incorporate creative dramatics, music, art, film, or a combination of arts into language arts instruction.

Blankenship, Jane, and Sara Latham Stelzner. *Speech Communication Activities in the Writing Classroom.* Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1979. (ED 181 505). This document focuses on integrating speech communication activities into writing programs for older students.

Book, Cassandra, and Kathleen Galvin. *Instruction in and About Small Group Discussion.* Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1975. (ED 113 773). Book and Galvin present group exercises to help students understand group development and processes, group norms, cohesiveness, conformity, problem solving, decision making, networks, roles, leadership, environment, and interpersonal atmosphere.

Bratton, Mary Cataldi. *The Development of the System for Integrated Language Communications Observation.* Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1979. (ED 191 079). The System for Integrated Language Communications Observation (SILCO) was developed to provide descriptive information about integrated language communication instruction.

Bristow, Page S., and Alan E. Farstrup. *Reading in Health/Physical Education/Recreation Classes.* Washington, DC: National Education Association, 1981. (ED 207 973). Practical, uncomplicated suggestions for identifying the broad categories of difficulties students often have in reading textbooks, written instructions, rules, etc., are provided. The authors offer realistic ideas to help you help your students.

*Britton, James. ***Language and Learning.*** New York: Penguin, 1970. Britton presents a theory of language development which incorporates real world (participatory) and representational (spectatorial) uses. He examines the relationships among experience, thought, language, and learning through examples of the language of preschool, elementary, and secondary school children.

Britton, James. ***Prospect and Retrospect.*** Upper Montclair, NJ: Boynton Cook, 1982. This book presents essays written over the last 30 years by one of England's leading teachers of teachers and writers about language and learning.

Britton, James, Tony Burgess, Nancy Martin, Alex McLeod, and Harold Rosen. ***The Development of Writing Abilities (11-18).*** London: Macmillan Education, 1975. This title reports on a research project designed to formulate and test a set of writing categories at the University of London Institute of Education. It also analyzes the types of writing done by middle school and secondary students.

Brozo, William G., and Carl M. Tomlinson. "Literature: The Key to Lively Content Courses." ***Reading Teacher,*** Vol. 40, No. 3, December 1986, pp. 288-293. (EJ 343 697). The authors suggest that children's literature used skillfully in tandem with textbooks makes the content curriculum more palatable, comprehensible, and memorable.

*Bruner, Jerome. "The Ontogenesis of Speech Acts." ***Journal of Child Language,*** Vol. 2, 1975, pp. 1-40. (EJ 119 616). A speech act approach to the transition from prelinguistic to linguistic communication is adopted in order to consider language in relation to behavior and to allow for an emphasis on the use, rather than the form, of language.

*Bruner, Jerome. "The Role of Dialogue in Language Acquisition." In ***The Child's Conception of Language,*** ed. by A. Sinclair, R. J. Jarvella, and W. J. M. Levelt. New York: Springer-Verlage, 1978, pp. 241-256. Bruner explores the role of dialogue in language development. He summarizes research by other linguists including Chomsky, Brown, and Halliday, and shows how parental support or "scaffolding" serves as a platform for the child's language.

Buckley, Marilyn Hanf. "When Teachers Decide to Integrate the Language Arts." ***Language Arts,*** Vol. 63, March 1986, pp. 369-377. (EJ 331 250). Buckley describes a project to integrate teaching of the separate language arts in three elementary schools. Included are the philosophical statements of the project; guidelines; activities for before, during, and after reading; and a positive evaluation of the project.

Bullock, Terry L, and Karl D. Hesse. ***Reading in the Social Studies Classroom.*** Washington, DC: National Education Association, 1981. (ED 206 555). This publication is designed to help those who have had no special training in reading but realize students may need help in reading social studies materials.

*Bushing, Beverly A., and Judith I. Schwartz, eds. ***Integrating the Language Arts in the Elementary School.*** Urbana, IL: National Council of Teachers of English, 1983. (ED 238 029). These 19 essays attempt to solve two problems that have long plagued those who desire to integrate the language arts—lack of practical knowledge of how to integrate instruction and lack of professional support for the teacher who wants an integrated curriculum to take to a superintendent or school board.

Butler, Andrea, and Jan Turbill. ***Toward a Reading-Writing Classroom.*** Portsmouth, NH: Heinemann Educational Books, 1985. (ED 250 650). The authors discuss ways in which the process approach that has revolutionized teaching writing may be applied effectively to the teaching of reading.

*Calkins, Lucy McCormick. ***The Art of Teaching Writing.*** Portsmouth, NH: Heinemann Educational Books, 1986. The book includes chapters on poetry, fiction, and report writing, with extensive sections on reading-writing connections, writing development, teacher-student conferences, and writing across the curriculum. It includes sections on mini-lessons on skills, trusting incidental learning, and learning logs.

*Calkins, Lucy McCormick. "When Children Want to Punctuate: Basic Skills Belong in Context." In "Research Update," edited by Donald Graves, *Language Arts*, May 1980, pp. 567-573. Calkins demonstrates that uses of punctuation are more effectively learned through incidental teaching in the context of writing than through formal drill exercises.

Carr, Eileen, and Donna Ogle. "K-W-L Plus: A Strategy for Comprehension and Summarization." *Journal of Reading*, Vol. 30, No. 7, April 1987, pp. 626-631. (EJ 350 560). Carr and Ogle add mapping and summarization to the K-W-L (Know, Want to Know, Learned) strategy to produce a reading-thinking strategy, equally helpful to remedial and nonremedial high school students for content area textbooks.

*Cazden, Courtney. "Adult Assistance to Language Development: Scaffolds, Models, and Direct Instruction." In *Developing Literacy: Young Children's Use of Language*, edited by Robert Parker and Frances A. Davis. Newark, DE: International Reading Association, 1983. (ED 252 843). This book examines language in its broader social, cultural, and cognitive contexts and discusses the role of adult support for children's emerging literacy. Many other valuable papers are included.

*Cazden, Courtney. "Peekaboo as an Instructional Model: Discourse Development at Home and at School." *Papers and Reports of Child Language Development, No. 17*. Stanford, CA: Stanford University Department of Linguistics, 1979. (ED 191 274). This document reviews studies of classroom talk and mother-child interaction. It examines classroom language in relation to the speech situation, speech event, and speech acts and compares the support provided by home language with that of school language.

Cheyney, Arnold B. *Teaching Reading Skills through the Newspaper*. Newark, DE: International Reading Association, 1984. (ED 250 672). This publication contains techniques for using the newspaper in teaching or reinforcing specific reading skills.

Chilver, Peter, and Gerard Gould. *Learning and Language in the Classroom: Discursive Talking and Writing Across the Curriculum*. Elmsford, NY: Pergamon Press, 1982. Chilver and Gould examine the role of language in the classroom and its effects on student learning. They focus on discussion, reading, and expository and creative writing, and examine the teacher's role in classroom communication.

Chorny, Merron. "A Canadian Perspective: Focus on Talk." *English Education*, Vol. 13, February 1981, pp. 32-35. (EJ 243 719). This is an overview of studies on the role of talk in student learning.

Christenbury, Leila, and Patricia P. Kelly. *Questioning: A Path to Critical Thinking*. Urbana, IL: National Council of Teachers of English, 1983. (ED 226 372). The authors' questioning circle combines three aspects of the questioning process—the subject matter; the individual's experiences, values, and ideas; and the experiences, values, and ideas of other peoples and cultures.

Christensen, Linda, ed. *A Guide to Integrating Language Arts*. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1982. (ED 249 512). Two model programs for integrating the language arts and specific lessons that integrate language arts activities for kindergarten through grade 12 are described.

Collins, Sarah H., and Frederick B. Tuttle, Jr. *Technical and Scientific Writing*. Washington, DC: National Education Association, 1979. (ED 165 160). Special applications and annotated examples of types of writing are discussed. The focus is on the unique requirements of business, technical, and scientific writing as distinct from affective or emotive writing.

Connelly, Desmond. "On Integration of School Learning." *Education Canada*, Vol. 12, December 1972, pp. 23-27. (EJ 071 913). Truly integrated learning calls for all the school's resources and careful planning by teachers and pupils.

Considine, David M. "Visual Literacy and the Curriculum: More to It Than Meets the Eye." ***Language Arts,*** **Vol. 64, October 1987, pp. 634-640. (EJ 360 632). The article discusses the need for American schools to move from the chalk-and-talk environment to prepare students for an expanding nonverbal and visual culture, dependent on electronic technology. An interview with author/illustrator Gail E. Haley is used to emphasize the power of the visual mode.**

Cooper, Charles R., ed. ***The Nature and Measurement of Competency in English.*** **Urbana, IL: National Council of Teachers of English, 1981. (ED 203 369). Six contributors discuss competency issues and attempt to define language, reading, writing, and media competency.**

Cordeiro, Patricia, Mary Ellen Giacobbe, and Courtney Cazden. "Apostrophes, Quotation Marks, and Periods: Learning Punctuation in the First Grade."** ***Language Arts, **Vol. 60, March 1983, pp. 323-332. (EJ 277 934). The article describes a study of first graders' progress in learning punctuation in the context of writing. It contains suggestions for in-context teaching and learning.**

Cowen, John E., ed. ***Teaching Reading Through the Arts.*** **Newark, DE: International Reading Association, 1983. (ED 226 339). The book shares ideas about the effective use of the arts in conjunction with a reading program. The 15 authors emphasize the practical aspects of integrating mastery of reading skills with various art forms.**

Crowell, Doris, and Kathryn Au. "Using a Scale of Questions to Improve Listening Comprehension." ***Language Arts,*** **Vol. 56, January 1979, pp. 38-43. (EJ 195 969). The authors describe research that tested the validity of a set of guidelines for a program for the systematic development of listening comprehension skills.**

Cunningham, Patricia M., and James W. Cunningham. "Improving Listening in Content Area Subjects." ***NASSP Bulletin,*** **Vol. 60, December 1976, pp. 26-31. (EJ 158 035). The ability to listen attentively and critically is crucial. This article describes two techniques for improving listening skills.**

Dalzell, Pat. "Media Unit for Secondary English." ***English Quarterly,*** **Vol. 16, Spring 1983, pp. 7-12. (EJ 286 450). Dalzell offers a detailed description of a unit designed to explore the effectiveness of communication through the media that emphasizes all modes of communication—listening, speaking, reading, and writing.**

Devine, Thomas G. ***Listening Skills Schoolwide: Activities and Programs.*** **Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1982. (ED 219 789). Devine argues for teaching listening as a set of high-grade skills inseparable from thinking. He reviews current theory and research on the importance of listening instruction, and concentrates on successful classroom ideas and exercises for grades 5-12.**

Dillon, D., and D. Searle. "The Role of Language in One First Grade Classroom." ***Research in the Teaching of English,*** **1981, pp. 311-328. (EJ 256 215). The article investigates the role of pupil language in classroom learning through an ethnographic study of one "good" teacher and her class, particularly three average and above average pupils. It cites the need for more student talk as a way to learn.**

Duffy, Gerald G., ed. ***Reading in the Middle School.*** **Newark, DE: International Reading Association, 1974. (ED 098 556). Middle school reading or content area teachers will find realistic descriptions of reading content and of instructional strategies for this age group. This is a pragmatic handbook for teachers who provide the transitional link between elementary and secondary school reading.**

Dupuis, Mary M., ed. ***Reading in the Content Areas: Research for Teachers.*** **Newark, DE: International Reading Association, 1983. (ED 236 544). This comprehensive source delineates research in content area reading. Discussion is organized by chapter around seven specific content areas: English, social studies, foreign language, mathematics, music, physical education, and science.**

Earle, Richard. *Teaching Reading and Mathematics.* Newark, DE: International Reading Association, 1976. (ED 120 670). This practical and usable teaching guide explains the what and how of teaching reading along with teaching mathematics. The author demonstrates how using appropriate reading skills works in perceiving symbols, grasping literal meaning of vocabulary and explicit ideas, analyzing relationships, and solving word problems.

Early, Margaret. "The Four-Wheel Drive." *Elementary English,* Vol. 51, May 1974, pp. 707-714. (EJ 100 906). Elementary language arts programs demand a balanced use of reading, writing, speaking, and listening.

Edwards, Carolyn P., and others. "Talking with Young Children About Social Ideas." *Young Children,* Vol. 39, November 1983, pp. 12-19. (EJ 288 576). The authors describe social cognition curriculum learning activities designed to enhance young children's social and moral reasoning. Activities present challenging problems that children could deal with through dramatic skits, a thinking game, and spontaneous discussions.

*Eisner, Elliot W. *Cognition and Curriculum.* New York: Longman, 1982. Eisner examines the role of the senses in concept formation and, thus, the role of experience in curriculum. He argues that literacy involves a range of modes of representation, not just verbal language, and suggests that basics in education must be expanded to include the many ways humans construct meaning.

*Eisner, Elliot W., ed. *Reading, the Arts, and the Creation of Meaning.* Reston, VA: National Art Education Association, 1978. (ED 157 032). This document explores forms of cognition used to read text and those used to read visual art. The role of imagination as part of the comprehension process is stressed, as is the need to approach the teaching of reading as a generic activity drawing on the child's prior "reading" experience.

Emig, Janet. *The Web of Meaning: Essays on Writing, Teaching, Learning and Thinking.* Montclair, NJ: Boynton Cook, 1983. The title of these 11 essays and talks comes from Vygotsky's famous observation that writing is elaborating the web of meaning. The essays explore what writing and learning are, how they can be nurtured, and what teaching means in relation to them.

"The Essentials of Education: A Call for Dialogue and Action." Organization for the Essentials of Education, 1981. Available from Urbana, IL: National Council of Teachers of English. This policy statement endorsed by numerous professional associations supports the interdependence of all subject areas and the central role of language and thinking in education.

"Essentials of English." *English Journal,* Vol. 72, February 1983, pp. 51-53. (EJ 274 177). This article emphasizes the way English contributes to the knowledge, understanding, and skills of society. It defines the many facets of the use of English: language, literature, communication skills (reading, writing, speaking, listening, using media), and different modes of thinking (creative, logical, critical).

Fletcher, David B. "ERIC/RCS Report: Oral Language and the Language Arts Teacher." *Language Arts,* Vo. 58, February 1981, pp. 219-224. (EJ 240 368). Fletcher examines recent research and its implications for language arts teachers regarding the development of children's oral language ability, speaking, and listening.

Fletcher, James E., and Stuart H. Surlin. *Mass Communication Instruction in the Secondary School.* Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1978. (ED 157 137). The authors stress the need for more knowledge about mass communication and a rationale for providing instruction in it. They identify objectives for mass communication instruction at the secondary level.

Fox, S. E., and V. G. Allen. *The Language Arts: An Integrated Approach.* New York: Holt, Rinehart, and Winston, 1983. The whys and hows of achieving an integrated program for elementary language arts are demonstrated. Fox and Allen stress the foundations, integration, organization, and evaluation of the language arts.

*French, Jim. "Whatever Happened to Language Across the Curriculum?" *Education Canada*, Vol. 25, Winter 1985, pp. 38-43. (EJ 333 469). French reviews articles published on the topic of language across the curriculum (LAC) from 1979-1984. Problems with LAC center on four issues: definition of LAC; influences of linguistic bias and an English-subject-centered leadership; implementation difficulties; and views of the relative success and failure of LAC initiatives.

Friedman, Paul G. *Interpersonal Communication: Innovations in Instruction.* Washington, DC: National Education Association, 1978. (ED 169 568). This document explores the theoretical bases for the study and practice of the human relations approach to interpersonal communication. It also contains instructional approaches, teaching strategies, and many classroom activities.

Friedrich, Gustav W., and Joy H. McClintock, eds. *Education in the 80s: Speech Communication.* Washington, DC: National Education Association, 1981. (ED 196 113). This is an examination of speech communication instruction in elementary schools, secondary schools, community colleges, colleges and universities, and the world of work with a focus on the 80s.

Fulwiler, Toby. "Journals Across the Disciplines." *English Journal*, December 1980, pp. 14-19. (EJ 238 430). Fulwiler discusses the reasons and methods for incorporating journal writing into classroom activity and describes the writing-across-the-curriculum program in the humanities division at Michigan Technological University.

Fulwiler, Toby. *Guidelines for Using Journals in School Settings.* Approved by the NCTE Commission on Composition. Urbana, IL: National Council of Teachers of English, 1987. (ED 282 232). The author includes assumptions about the connection between thought and language that underlie use of journals, reasons that journals help students interact with material being learned, and guidelines for assigning journals.

Fulwiler, Toby, ed. *The Journal Book.* Portsmouth, NH: Boynton/Cook. This collection of 39 articles explores uses of student journals from elementary grades through college in the teaching of English, arts and humanities, and quantitative disciplines.

Fulwiler, Toby, and Art Young, eds. *Language Connections: Writing and Reading Across the Curriculum.* Urbana, IL: National Council of Teachers of English, 1982. (ED 218 667). The editors link theoretical issues to prevailing practices regarding the development of positive writing and reading habits. Various aspects of "writing across the curriculum" are explored by different authors in 12 chapters.

Gebhard, Ann O. "Teaching Writing in Reading and Content Areas." *Journal of Reading*, Vol. 27, December 1983, pp. 207-211. (EJ 291 323). Gebhard discusses four principles derived from theory and practice that make incorporating writing into any class easy and worthwhile: creating audience awareness, making writing tasks consequential, varying writing assignments, and using writing to help students integrate new material into what they already have.

Geller, Linda Gibson. *Wordplay and Language Learning for Children.* Urbana, IL: National Council of Teachers of English, 1985. (ED 261 393). The author demonstrates the many ways wordplay can be incorporated into classroom teaching, such as a preschooler learning to categorize speech sounds with the help of rhythmic verse; the way children in the early elementary years begin to enjoy nonsense as part of their growing confidence that they know what sense is; and the older elementary school student's more sophisticated appreciation of humor and parody once the basic forms and social conventions of language use have been mastered.

Gere, Ann Ruggles, ed. *Roots in the Sawdust: Writing to Learn Across the Disciplines.* Urbana, IL: National Council of Teachers of English, 1985. (ED 262 419). Writing can be the foundation of learning in all the disciplines.

Gentile, Lance M. *Using Sports and Physical Education to Strengthen Reading Skills.* Newark, DE: International Reading Association, 1980. (ED 193 601). Designed for middle, intermediate, and secondary school coaches and physical education instructors, this book describes reading in general and reading as it supports the physical education program.

Gilham, Bruce, ed. *The Language of School Subjects.* Portsmouth, NH: Heinemann, 1986. This book examines the place of the textbook, the role of examinations, study skills, the difficult language transfer from primary to secondary school, along with the language of mathematics, history, home economics, science, English, and the humanities.

Glatthorn, Allan A. *A Guide for Developing an English Curriculum for the Eighties.* Urbana, IL: National Council of Teachers of English, 1980. (ED 193 671). This step-by-step process for improving the English curriculum in a school district includes an analysis of current trends and influences on the English curriculum, and summarizes research findings in different language areas. It advocates that teachers and curriculum leaders translate this knowledge and experience into usable curriculum materials. The plan for curriculum development applies to any area.

Goggin, William F. "A Message for History and Social Studies Teachers." *Social Studies,* Vol. 76, July-August 1985, pp. 170-173. (EJ 322 807). Strategies to help social studies teachers integrate writing into their classes are suggested. These include student journals, focused freewriting, written assignments used for review, creative book reports, poems, short stories, and songs.

Graham, Kenneth G., and Alan Robinson. *Study Skills Handbook: A Guide for All Teachers.* Newark, DE: International Reading Association, 1984. (ED 245 198). Busy elementary and secondary teachers can use this guidebook to improve their competence in teaching study skills.

Graves, Donald H. "Six Guideposts to Successful Writing Conferences." *Learning,* November 1982, pp. 76-77. Graves discusses six characteristics of successful writing conferences between teacher and student.

*Graves, Donald H. *Writing: Teachers and Children at Work.* Portsmouth, NH: Heinemann Educational Books, 1983. (ED 234 430). Classroom teachers will see other professionals and children solve problems that arise in the midst of teaching and writing. Includes a chapter on use of scaffolding in writing conferences.

Greenwood, J. *The Case for Content Across the Curriculum As Well As Language.* Paper presented at a regional seminar of the SEAMEO Regional Language Centre (20th, Singapore, April 22-26, 1985). (ED 262 612). Greenwood traces the development of the language-across-the-curriculum (LAC) movement in Britain from the 1960s. He argues that LAC is a responsibility of all teachers and identifies the traditional subject-based curriculum as an obstacle.

Haley-James, Shirley M. "Helping Students Learn Through Writing." *Language Arts,* October 1982, pp. 726-731. (EJ 269 738). The author outlines ways that writing encourages learning and discusses when it is most likely to do so and how teachers can link writing to learning in content area classes.

Haley-James, Shirley M. "Revising Writing in the Upper Grades." *Language Arts,* Vol. 58, May 1981, pp. 562-566. (EJ 245 671). Suggestions are presented for teachers to help writing students understand when and when not to revise their writing, along with strategies to guide revision.

Halliday, M. A. K. *Explorations in the Functions of Language.* New York: Elsevier North-Holland, 1973. Halliday explores the functional basis of language within a functional perspective.

Halliday, M. A. K. *Language as Social Semiotic: The Social Interpretation of Language and Meaning.* Baltimore: University Park Press, 1978. Halliday describes language as a meaning system and explores functions of language, variations according to users and use, and language as a system.

*Halliday, M. A. K. *Learning How to Mean: Explorations in the Development of Language.* New York: Elsevier North-Holland, 1975. Halliday extends the theory of a functional basis for language and language learning. The child is seen as an active constructor of meaning who learns through interaction with and support of more mature language users.

*Hansen, Jane, Tom Newkirk, and Donald M. Graves, eds. ***Breaking Ground: Teachers Relate Reading and Writing in the Elementary School.*** Portsmouth, NH: Heinemann Educational Books, 1985. This book shows how process approaches are used in teaching reading and writing, and provides new insights into the use of writing and reading in the content areas and how skills taught in writing help skills in reading and vice versa.

Hardt, Ulrich, ed. ***Teaching Reading with the Other Language Arts.*** Newark, DE: International Reading Association, 1983. (ED 298 447). The editor presents information supporting an integrated program, which points out that teachers must make selections which fit their students' needs and the demands of their teaching situations.

Harker, John W., ed. ***Classroom Strategies for Secondary Reading.*** Newark, DE: International Reading Association, 1985. Textbooks play a dominant role in secondary instruction. Here is a handbook on secondary reading strategies to help students improve their comprehension of textbook materials.

Harker, John W. "Does Content-Area Reading Teach Content-Area Learning?" ***Reading Horizons,*** Vol. 22, Fall 1981, pp. 25-28. Four steps teachers can use to ensure that content area reading instruction enhances content area learning are presented: determine learning objectives, determine needed reading and study skills, accurately diagnose student needs, and select specific skills for teaching at any one time.

Heath, Shirley B. "Research Currents: A Lot of Talk About Nothing." ***Language Arts,*** Vol. 60, November-December 1983, pp. 999-1007. (EJ 289 497). Heath discusses the interrelationship of the language arts, and how both oral and written language help the learning process.

Heathcote, Dorothy. "Learning, Knowing, and Languaging in Drama." ***Language Arts,*** Vol. 60, September 1983, pp. 695-701. (EJ 286 513). Drama provides a sense of immediacy to subjects or stories and to the discovery process of learning.

Heller, Mary F. "Directed Reading and Writing in the Content Areas." ***Reading Psychology,*** Vol. 7, No. 3, 1986, pp. 173-182. The article describes a directed reading and writing lesson that uses the power of the composing process throughout content area lessons to enhance reading comprehension; uses a fifth grade science lesson as a model.

Hemphill, John. "Language Arts Instruction: A Continuum of Possible Models." ***Language Arts,*** Vol. 58, September 1981, pp. 643-651. (EJ 252 125). Hemphill describes three approaches to language arts instruction—student centered/integrated, content centered/segmented, and a combination of these two; examines the strong and weak points of each.

Hennings, Dorothy G. ***Teaching Communication and Reading Skills in the Content Areas.*** Bloomington, IN: Phi Delta Kappa, 1982. (ED 229 737). This book is for elementary teachers who want to incorporate language skill-building activities into their subject instruction.

Holbrook, Hilary Taylor. "ERIC/RCS Report, Writing to Learn in the Social Studies." ***The Reading Teacher,*** Vol. 41, November 1987, pp. 216-219. (EJ 360 649). Holbrook reviews sources in the ERIC/RCS database which provide a rationale for content area writing to learn, with a focus on critical writing in the social studies.

Iowa Department of Education. ***A Guide to Curriculum Development in Language Arts.*** A Curriculum Coordinating Committee Report. Des Moines, IA: Iowa Department of Education, 1986. (ED 276 052). This guide presents rationale, philosophy, and goals for an integrated language arts curriculum, K-12. A concentric circles model shows the integration of individual capacities, language functions, communication modes, and audience. Examples of integration, guidelines for assessment and implementation, and bibliography are included.

Iowa Department of Public Instruction. ***Framework: Integrating Language Arts.*** Des Moines, IA: Department of Public Instruction. (ED 211 990). A framework for curriculum development on an integrated approach to the language arts is provided, and comprehending and composing processes are provided.

Jaggar, Angela, and M. Trika Smith-Burke, eds. ***Observing the Language Learner.*** **Urbana, IL: National Council of Teachers of English, 1985. (ED 251 857).** This collection of 17 articles is based on the concept of watching kids for the aspects of language learning. It explains why they are important and shows teachers what to look for and how to interpret what they see and hear.

Jensen, J. M., ed.** ***Composing and Comprehending. **Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills and National Conference on Research in English, 1984. (ED 243 139).** Several articles on the reading/writing relationship define the relationship between composing and comprehending, explore relevant research, and discuss the implications of this relationship to the learning and teaching processes.

Johnson, Liz, and Cecily O'Neill, eds. ***Dorothy Heathcote: Collected Writings on Education and Drama.*** **Portsmouth, NH: Heinemann Educational Books, 1984.** This book explains Heathcote's pioneering approach to learning through drama and her deep concern for curriculum development and the training of teachers.

Jolly, Thomas. "ERIC/RCS Report: Listen My Children and You Shall Read." ***Language Arts,*** **Vol. 57, February 1980, pp. 214-217. (EJ 227 709).** Jolly reviews several studies from the ERIC system that deal with the relationship between listening and reading skills and suggests resources for teaching listening skills.

Jolly, Thomas. "ERIC/RCS Report: Reading, Writing, Listening, Speaking." ***Language Arts,*** **Vol. 57, September 1980, pp. 664-668. (EJ 233 986).** Jolly reviews research on the relationship between the receptive language arts skills (reading and listening), the relationship between the expressive skills (writing and speaking), and the relationships between receptive and expressive skills. Teaching materials that reflect these interrelationships are discussed.

Kinneavy, James L. ***A Theory of Discourse: The Aims of Discourse.*** **Englewood Cliffs, NJ: Prentice-Hall, Inc., 1971.** The communication process is used as a framework for a theory of composition based on the aims of discourse.

Kirby, Dan, and Carol Kuykendall. ***Thinking Through Language, Book One.*** **Urbana, IL: National Council of Teachers of English, 1985. (ED 260 434, Guide—ED 260 433).** For junior high students, this book is aimed at integrating, rather than isolating, not only the thinking skills but the language arts themselves. Such an approach is rooted in the assumption that writing, talking, reading, and listening are means of thinking. (See Stanford and Stanford for Book Two.)

Knoblauch, C. H., and Lil Brannon. "Writing as Learning Through the Curriculum." ***College English,*** **Vol. 45, September 1983, pp. 465-474. (EJ 285 234).** The authors argue that writing in the content areas should be used in secondary and higher education as a discovery tool, stimulating students' conceptual involvement and prompting them to further investigations.

Konopak, Bonnie C., and others. "Reading and Writing: Aids to Learning in the Content Areas." ***Journal of Reading,*** **Vol. 31, November 1987, pp. 109-115. (EJ 359 215).** A guided writing procedure is suggested to aid students' comprehension and learning of content area material.

Kroll, Barry M., and R. J. Vann, eds. ***Exploring Speaking-Writing Relationships: Connections and Contrasts.*** **Urbana, IL: National Council of Teachers of English, 1981. (ED 204 794).** This collection of 13 articles discusses research on the similarities and differences between speaking and writing and explains the critical factors involved in teaching effective speaking and writing.

Langer, Judith A., and Arthur N. Applebee. "Learning to Write: Learning to Think." ***Educational Horizons,*** **Vol. 64, Fall 1985, pp. 36-38. (EJ 324 887).** The authors suggest a broad range of writing activities for students in subject area classes, which will foster content learning as well as writing proficiency; a network of teachers skilled in developing curriculum materials based on writing; and expectations for writing in content area classes, such as mathematics, science, and social studies.

Lehman, Barbara A., and David Hayes. "Advancing Critical Reading Through Historical Fiction and Biography." *Social Studies*, Vol. 76, July-August 1985, pp. 165-169. (EJ 322 806). Suggestions to help social studies teachers use historical fiction and biography to teach critical reading to intermediate grade students are made.

Lehr, Fran. "ERIC/RCS Report: Developing Language and Thought Through Creative Drama." *Language Arts*, Vol. 60, March 1983, pp. 385-389. (EJ 277 940). Lehr examines materials in the ERIC database that deal with the use of creative drama as a language arts teaching tool and discusses the nature of creative drama and activities for the classroom.

*Lehr, Fran. "ERIC/RCS Report: Instructional Scaffolding." *Language Arts*, Vol. 62, October 1985, pp. 667-672. (EJ 323 415). Materials in the ERIC system that deal with the concept of scaffolding, building on children's natural language, and ways teachers have translated the concept into instructional strategies are discussed.

Lehnert, Linda J. "Help Them to Speak, Write, and Listen—They'll be Better Readers." *Reading Horizons*, Vol. 21, Spring 1981, pp. 174-178. (EJ 257 675). Lehnert considers the role of oral language in reading and its implications for the primary grades teacher. A number of activities that integrate reading, speaking, listening, and writing are included.

Lindfors, Judith Wells. *Children's Language and Learning*. 2nd ed. Englewood Cliffs, NJ: Prentice Hall, 1987. This excellent discussion of language learning focuses on classroom applications. Sections on language and cognition and communicative competence are especially helpful. It explores functions of language (narrating, explaining/informing, expressing) and effects of situational factors (age, status, familiarity).

Lloyd-Jones, Richard. "Division and Synthesis: Implications of the Aspen Coalition Conference." *Focus of the Southeastern Ohio Council of Teachers of English*, Fall 1987, pp. 4-7. Key conclusions of the 1987 conference of the Coalition of English Associations at the Aspen Institute in Maryland are summarized. The conference was organized to set directions for English teaching in the next century. The Coalition supported integration, recognition of students' varied abilities, need for interaction in classrooms, and real uses of language including reading real (and diverse) literature vs. reading exercises.

*Loomer, Bradley M., Jerry N. Kuhn, and Beatrice A. Furner. *The Problem Method*. Rev. ed. Iowa City, IA: University of Iowa, College of Education and Division of Extension and University Services, 1977. Loomer identifies factors which affect one's choice of method and values of the problem method. Kuhn focuses on applying the problem method to a content area, while Furner discusses the nature of the language arts curriculum and applying the problem method in personal exploration experiences, skill teaching, and concept exploration. Classroom examples of integration through in-context lessons and units are included.

Lunstrum, John, and Bob Taylor. *Teaching Reading in the Social Studies*. Newark, DE: International Reading Association, 1978. (ED 157 008). After defining the issue of encountering inadequate reading skills in the social studies, the authors consider remedies in three problem areas: matching student abilities and resources, providing motivation to read in social studies, and improving comprehension of content matter.

Manning, Maryann Murphy, and Gary L. Manning. *Reading Instruction in the Middle School: A Whole School Approach*. Washington, DC: National Education Association, 1979. (ED 173 776). The book is organized into five major sections: the philosophy and rationale for including reading instruction in the middle school program, practical suggestions for teachers who wish to develop appropriate reading activities for students at different ability levels, suggestions to help middle school content area teachers stress reading improvement, approaches for increasing recreational reading among students, and methods for evaluating reading programs in the middle school.

Martin, Charles E. "Using Radar to Zero-In on Content Area Concepts." *Reading Horizons*, Vol. 23, Winter 1983, pp. 139-142. Martin discusses the radar technique—read, analogize, discuss, apply, review/research—and how it can be used in content area classrooms to teach concepts.

Martin, Kathleen, and Etta Miller. "Storytelling and Science." ***Language Arts,*** **Vol. 65, March 1988, pp. 255-259. (EJ 368 638).** Martin and Miller discuss story as a way of giving shape and form to experience—of making connections. They cite the value of story in science as a process of questioning.

Martin, Nancy, and others.** ***Writing Across the Curriculum Pamphlets. **Upper Montclair, NJ: Boynton Cook, 1983.** Writing can be an instrument of learning, reflection, and discovery, rather than merely a means of recording or testing.

Martin, Nancy, and others. ***Writing and Learning Across the Curriculum.*** **London: Ward Lock Educational, 1976. (Available from Hayden Publishing).** Chapter one includes an overview of the James Britton study presented in Developing of Writing Abilities. There are also sections on talk in the classroom, and the role of expressive writing in content area learning.

Martin, Nancy, Pat D'arcy, Bryan Newton, and Robert Parker. ***Writing and Learning Across the Curriculum 11-16.*** **Upper Montclair, NJ: Boynton Cook, 1976.** The authors emphasize the interrelationship of spoken and written language and seek to develop teaching techniques to promote use of language as a learning tool.

Mayher, John S., and Nancy B. Lester. "Putting Learning First in Writing to Learn." ***Language Arts,*** **Vol. 60, September 1983, pp. 717-721. (EJ 286 516).** Writing to learn has become a fashionable idea in progressive language education circles. The authors try to assess the importance of learning in writing.

Mayher, John S., Nancy B. Lester, and Gordon M. Pradl.** ***Learning to Write/Writing to Learn. **Upper Montclair, NJ: Boynton Cook, 1983. (ED 236 695).** The authors draw upon their inservice programs on learning to write/writing to learn. Practical applications for teachers, K-12, and commentary from Calkins, Healy, Britton, Odell, and Parker are included.

McCaslin, Nellie. ***Creative Drama in the Classroom.*** **New York: Longman, 1984.** McCaslin encourages a stronger emphasis on creative drama in the classroom and discusses play structure, exercises in storytelling, and story dramatization.

Meckler, Terry Anne, and James D. Vogler. ***Reading Improvement Using the Health Curriculum.*** **Paper presented at the Annual Meeting of the American Educational Research Association (March 31-April 4, 1985, in Chicago). (ED 254 836).** An experimental study demonstrated that students in a health curriculum restructured to use a reading/language format made significantly greater gains in reading/language test scores when compared to those in a traditional health curriculum. Also showed positive effects on experimental teachers' planning skills.

Mellon, John. "Language Competence." In ***The Nature and Measurement of Competency in English,*** **edited by Charles R. Cooper. Urbana, IL: National Council of Teachers of English, 1981. (ED 203 369).** Mellon discusses aspects of language competence and implications for teaching, and supports natural whole language approaches.

Mikulecky, Larry, and Rita Haugh. ***Reading in the Business Education Classroom.*** **Washington, DC: National Education Association, 1980. (ED 203 080).** This guide provides rationale and practical suggestions to help high school business education teachers teach students the reading skills necessary to handle skills and concept-oriented reading materials.

Millar, Dan P. ***Introduction to Small Group Discussion.*** **Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills and Annandale, VA: Speech Communication Association, 1986. No. 342. (ED 278 037).** Theory and exercises to develop student skills in group discussion, decision making, and problem solving are covered.

Moffett, James. ***Active Voice: A Writing Program Across the Curriculum.*** **Upper Montclair, NJ: Boynton Cook, 1981.** Moffett presents ideas for a 15-year interdisciplinary writing program, including processes and procedures, a rationale to justify the program to others, and description of a coordinated whole reading or literature program.

Moffett, James. ***Teaching the Universe of Discourse.*** **Boston: Houghton Mifflin, 1968.** An experimental curriculum based on how one learns processes of discourse is presented.

Moffett, James, and Betty Jane Wagner. ***Student-Centered Language Arts and Reading K-13.*** **2nd ed. Boston: Houghton Mifflin, 1976.** The authors advance a model for K-13 curriculum in English, including oral and written language and all expressive experiences. The critical element in language learning is the child's active involvement in using language.

Monson, Diane, ed. "The Literature Program and the Arts." ***Language Arts,*** **Vol. 59, March 1982, pp. 254-258. (EJ 259 370).** Literature is related to drama and music in order to achieve an integrated language arts curriculum.

Moore, David W., Sharon A. Moore, Patricia M. Cunningham, and James W. Cunningham.** ***Developing Readers and Writers in the Content Areas: K-12. **White Plains, NY: Longman, 1986.** This book covers both the elementary and secondary grades, emphasizing the significance of teaching reading and writing together. It illuminates characteristics the two disciplines share, details the practical teaching methods, and presents teaching techniques in the context of daily classroom instruction in the content areas.

Moore, David W., John Readence, and Robert J. Rickelman. ***Pre-Reading Activities for Content Area Reading and Learning.*** **Reading Aids Series. Newark, DE: International Reading Association, 1982. (ED 222 888).** This monograph presents a collection of instructional options for preparing students to read their content area texts. Suggested strategies help content teachers integrate the techniques naturally into their regular classroom lessons.

Murray, Donald. ***Write to Learn.*** **2nd ed. New York: Holt, Rinehart and Winston, 1986.** A Pulitzer-prize winning writer demonstrates the process approach to writing through the step-by-step development of one of his own essays. New edition has five case studies of student writing.

Myers, John W. ***Writing to Learn Across the Curriculum.*** **Bloomington, IN: Phi Delta Kappa, 1984. (ED 248 532).** Intended for use by secondary teachers in all subject areas, this document provides research-based information designed to make writing a learning process in all curricular areas. Writing ideas and suggestions for language arts, social studies, science, mathematics, industrial arts, business and vocational studies, art and music, and home economics are included.

Najimy, Norman C., ed. ***Measure for Measure: A Guidebook for Evaluating Students' Expository Writing.*** **Urbana, IL: National Council of Teachers of English, 1981. (ED 191 020).** This guide is for all teachers who evaluate student writing—social studies reports, lab reports, test essays, etc. Twenty-two teachers from elementary through postsecondary schools have developed the idea of evaluation as a step in the writing process; as instructional, not punitive.

Support for the Learning and Teaching of English (SLATE). "Guidelines for Using Journals in School Settings." Urbana, IL: National Council of Teachers of English, Commission on Composition, June 1987. (ED 282 232). This is a SLATE Starter Sheet.

Newkirk, Thomas, ed. ***Only Connect: Uniting Reading and Writing.*** **Upper Montclair, NJ: Boynton Cook, 1986.** The authors examine the historical reasons for the paradoxical schism between reading and writing in schools and colleges and present powerful arguments for uniting these two aspects into a single activity.

Newkirk, Thomas, ed. ***To Compose: Teaching Writing in the High School.*** **Chelmsford, MA: Northeast Regional Exchange, 1985. (ED 267 415).** Twelve essays explore the composition process and composition instruction. Includes a section on writing across the curriculum.

Newkirk, Thomas, and Nancie Atwell, eds.** ***Understanding Writing: Ways of Observing, Learning, and Teaching. **Chelmsford, MA: The Northeast Regional Exchange, Inc.,1982. Available from National Council of Teachers of English or Heinemann Educational Books. (ED 227 485).** This collection of 20 articles for K-8 teachers concerned with beginning a new writing program and evaluating student progress includes sections on the writing conference as a "Thinking Conference" and writing for learning across the curriculum.

Newman, Judith. ***Whole Language: Theory in Use.*** Portsmouth, NH: Heinemann Educational Books, 1985. Newman shows how whole language theory can be put into practice and suggests ways teachers can create a learning context in which reading and writing become tools for finding out about the world.

Noether, Kathy. "The Interdependence of Social Studies and Writing in the Elementary Schools." ***Social Studies Review,*** Vol. 26, No. 4, Winter 1987, pp. 4-9. This article provides an overview of how oral language and writing activities may be integrated into a typical K-6 social studies curriculum.

Nugent, Susan M., ed. ***Integrating Speaking Skills into the Curriculum.*** Urbana, IL: National Council of Teachers of English, 1986. (ED 274 002). This document presents ideas for motivating students to use language creatively. Included are methods for linking the processes of writing and speaking to most fully tap students' abilities to create and organize their thoughts.

O'Keefe, V. P. ***Affecting Critical Thinking through Speech.*** Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills and Annandale, VA: Speech Communication Association, 1986. (ED 267 476). O'Keefe shows how spoken language can affect student thinking. Presents strategies for teaching critical thinking skills to secondary students through question-making, small-group discussions, debate, role-playing, etc.

*Parker, Robert. "The 'Language Across the Curriculum' Movement: A Brief Overview and Bibliography." ***College Composition and Communication,*** Vol. 36, May 1985, pp. 173-177. (EJ 316 593). Parker highlights principles and milestones in the LAC movement in English-speaking countries. Bibliography contains key sources. Has pertinence for both K-12 and college levels.

Parker, Robert P., and Frances A. Davis, eds. ***Developing Literacy: Young Children's Use of Language.*** Newark, DE: International Reading Association, 1983. (ED 252 843). The nature of reading and language as a thinking process is discussed, stressing the relationships among reading, writing, speaking, and listening.

Pearce, Daniel L. "Writing in Content Area Classrooms." ***Reading World,*** Vol. 23, March 1984, pp. 234-241. (EJ 294 666). Pearce describes Sacramento City College's Higher Education Learning Package (HELP), which integrates reading, writing, study skills, and content instruction in the regular classroom to improve basic skills and personal development of nontraditional, high-risk students. He covers the HELP program's team-teaching approach, three-phase implementation strategy, and materials, and discusses student responses and problems encountered.

Peters, William H., and the CEE Commission on Research in Teacher Effectiveness. ***Effective English Teaching: Concept, Research, and Practice.*** Urbana, IL: 1987. (ED 285 197). An organic field model of the teaching of English based on integrating content variables (substance, skill, process) and context variables (community, policy, profession) is supported, and research concerning these variables is reviewed.

Petersen, Bruce T., ed. ***Convergences: Transactions in Reading and Writing.*** Urbana, IL: National Council of Teachers of English, 1986. (ED 265 568). The processes of reading and writing are seen as inseparably linked. This collection of 16 essays is based on the premise that a transactional mode of reading and writing will lead to the convergence of these processes in literature, composition, and language classrooms.

Pinne, Susan M. ***Teaching Reading in the Mathematics Class.*** April 1983. (ED 228 618). This annotated bibliography helps mathematics teachers understand how reading difficulties can affect math performance.

Pinnell, Gay Su, ed. ***Discovering Language with Children.*** Urbana, IL: National Council of Teachers of English, 1980. (ED 193 645). Research findings and classroom suggestions for language development as a discovery process are presented. A helpful section on evaluation is included.

Rader, William D. "Improving Critical Reading Through Consumer Education." *Social Education*, Vol. 42, January 1978, pp. 18-20. (EJ 172 590). Rader explores the relationship of advertising to reading, consumer education, and social studies and recommends development of learning objectives which reflect this relationship. He explains how to teach about advertising in social studies courses.

Reeves, Harriet R. "Building Basic Skills With Music." *Music Educators Journal*, Vol. 65, September 1978, pp. 74-79. (EJ 191 785). Increasingly, music teachers are being asked to join forces with their fellow teachers to devise interdisciplinary approaches to learning. Presented are suggestions for using music to teach basic listening and language skills at the preschool and early elementary levels.

Reinking, David. "Integrating Graphic Aids Into Content Area Instruction: The Graphic Information Lesson." *Journal of Reading*, Vol. 30, November 1986, pp. 146-151. (EJ 342 486). Reinking considers the use of graphic aids with regard to readers' ability to integrate graphic with written information. He points out students' need for instructional activities that develop skills such as inference through information, coordination of the graphic aid, text, and prior knowledge. He presents the three stages of the GIL.

Road...Maps. Curriculum Activities Guide. *Migrant Students Grades K-6. Infused Career Education Plans in Language Arts, Social Studies, Math.* Vineland, NJ: Vineland School District, 1986. (ED 270 646). This curriculum activities guide presents a series of graded instructional plans for infusing career education into K-6 language arts, social studies, mathematics and science curricula.

Road...Maps. Curriculum Activities Guide. *Migrant Students Grades 7-12. Infused Career Education Plans in Language Arts, Social Studies, Math.* Vineland, NJ: Vineland School District, 1986. (ED 270 647). This curriculum activities guide presents a series of graded instructional plans for infusing career education into grades 7-12 language arts, social studies, mathematics and science curricula.

Robinson, H. Alan. *Teaching Reading, Writing, and Study Strategies: The Content Areas.* 3rd ed. Boston: Allyn and Bacon, 1983. Robinson discusses reading, writing, and study strategies important to all content areas (assessment, prereading and prewriting, comprehension, vocabulary, readability). Separate chapters discuss strategies for specific content areas.

Robinson, H. Alan, and Ellen L. Thomas, eds. *Fusing Reading Skills and Content.* Newark, DE: International Reading Association, 1969. (ED 075 786). The writers favor reading as an integral part of a content learning program. They relate how reading fits into home economics, French, typewriting, mathematics, physical education, art, social studies, music, and biology.

Rockcastle, Vern N. "Nothing Succeeds Like Succession." *Science and Children*, Vol. 23, April 1986, pp. 20-21. (EJ 338 030). The author encourages the use of imaginative writing about scientific phenomena and principles. He offers samples of student writings on the concept of succession.

Rosser, Becky. "Organizing the Research Paper Using the Circular Essay." *School Library Media Activities Monthly*, Vol. 3, March 1987, pp. 28-30. Rosser describes a three-stage method for organizing a research paper which focuses on teaching the mechanics of organization: organizing the material; the composing process; and revision. Detailed steps are outlined for each stage.

Rossiter, Richard. "Learning About Literature by Writing." *Australian Journal of Reading*, Vol. 8, November 1985, pp. 196-202. Writing is perhaps the most important way of learning about literature because it has the capacity to draw on all other modes of learning.

Rubano, Gregory. "Using Writing to Teach Political Decision Making." *Social Education*, Vol. 51, April-May 1987, pp. 278-279. This article provides a lesson plan for senior high school which uses writing to help students learn about World War II.

Rush, T. Timothy, Alden J. Moe, and Rebecca L. Storlie. ***Occupational Literacy Education.*** **Newark, DE: International Reading Association, 1986. (ED 270 728).** This book provides adult and occupational educators with basic information for developing literacy and related occupational competencies in adults or adolescents. It provides glimpses of the sorts of reading, writing, and oral language adults face during training and on the job, including extensive lists of technical vocabulary, for 10 occupations: account clerk, auto mechanic, draftsman, electrician, heating/air conditioning mechanic, industrial maintenance mechanic, licensed practical nurse, machine tool operator, secretary, and welder.

Schmidt, William H., and others. ***Curriculum Integration: Its Use in Language Arts Instruction.*** **Research Series No. 140. East Lansing: Institute for Research on Teaching, Michigan State University, 1983. (ED 241 942).** This document examines the amount and kinds of language arts curriculum integration in the natural elementary school classroom setting, the contextual factors associated with such integration, and the relationship between teachers' thinking about this subject and the occurrence of integration in their classrooms.

Searle, Dennis. "Scaffolding: Who's Building Whose Building?"** ***Language Arts, **Vol. 61, September 1984, pp. 480-483. (EJ 304 042).** Searle discusses how "scaffolding"—adult support of children's attempts to achieve an intended language outcome—has been somewhat misused in the schools, resulting in the support of the teacher's intentions rather than those of the child.

Shafer, Robert E., Clair Staab, and Karen Smith. ***Language Functions and School Success.*** **Glenview, IL: Scott, Foresman and Co., 1983.** The authors summarize major theoretical views of language and language functions, using Tough's work to outline assessment strategies for major functions. Includes a chapter on integrating oral language into the curriculum.

Sharp, Peggy A. "Teaching with Picture Books Throughout the Curriculum." ***Reading Teacher,*** **Vol. 38, November 1984, pp. 132-137. (EJ 306 576).** Sharp argues that picture books can be used effectively in teaching all areas of the elementary school curriculum.

Shubert, Janelle. "Symposium: Diffusing Communication Into the Secondary School Curriculum: Strategies for Planning and Diffusing a New Program." ***Communication Education,*** **Vol. 26, September 1977, pp. 246-250. (EJ 171 304).** This article focuses on guidelines to be used by high school speech communication teachers when designing a new program that diffuses the teaching of communication skills from the classroom into the entire curriculum.

Shuman, R. Baird. ***Strategies in Teaching Reading: Secondary.*** **Washington, DC: National Education Association, 1978.** High school teachers get a source of immediately usable ideas for teaching reading. Techniques described range from diagnosis to prescription and treatment and attempt to eliminate the need for endless drill. Gives special attention to such concerns as the nonreader, dialects, miscue analysis, the slow reader, and reading assignments.

Sledow, Mary D., David M. Memory, and Page Bristow. ***Inservice Education for Content Area Teachers.*** **Newark, DE: International Reading Association, 1985. (ED 259 326).** A model of inservice for content area teachers is presented. Among the aids are checklists, assessment instruments, attitude inventories, lists of instructional practices related to reading in the content area, lists of skills in content area reading categorized by subject, and a list of reading related objectives with suggestions for appropriate evaluation of each.

Smith, Cyrus F. Jr., and Henry S. Kepner, Jr. ***Reading in the Mathematics Classroom.*** **Washington, DC: National Education Association, 1981. (ED 207 836).** Help students learn how to read the language of mathematics. The style of this book is clear, straightforward, and comprehensible.

Smith, Frank. "The Language Arts and the Learner's Mind." ***Language Arts,*** **Vol. 56, February 1979, pp. 118-125. (EJ 204 433).** Speaking and listening, reading, and writing can be brought together in the learner's mind.

Speaking and Listening in Vocational Education. **Corvallis, OR: Vocational Technical Education Unit, Oregon State University, 1982. (ED 226 206).** This handbook is designed to help vocational teachers promote oral and written communication skills.

"Essential Speaking and Listening Skills for Elementary School (6th Grade Level)." Annandale, VA: Speech Communication Association, 1984. No. 415. (EJ 320 843). This brochure lists speaking and listening skills.

"Speaking and Listening Competencies for High School Graduates." Annandale, VA: Speech Communication Association, 1982. No. 414. This brochure lists speaking and listening skills.

Spillman, Carolyn V., and others. "Visual Communication in the Classroom: Concepts and Applications." *Contemporary Education*, Vol. 54, Summer 1983, pp. 295-298. (EJ 286 054). Children must learn to discriminate among the visual stimuli they experience and to recognize the existence of a visual language. Learning activities to help young children develop a sense of visual literacy are suggested.

*Squire, James R. "Composing and Comprehending: Two Sides of the Same Basic Process." *Language Arts*, Vol. 60, May 1983, pp. 581-589. (EJ 280 831). Squire argues that composing and comprehending are process-oriented thinking skills that are basically interrelated, and suggests ways that these skills can be taught.

*Squire, James R., ed. *The Dynamics of Language Learning: Research in Reading and English.* Urbana, IL: National Conference on Research in English and ERIC Clearinghouse on Reading and Communication Skills, 1987. (ED 280 080). Papers from the NCRE Mid-Decade Seminar to explore future directions for research in English and reading are included. Each of six research topics emphasizes the interrelationship among the language arts.

Staab, Claire F. "Using the Social Studies Curriculum to Elicit Specific Language Functions." *Education*, Vol. 105, Winter 1984, pp. 219-229. (EJ 321 445). Staab explains the concept of language function and its importance in classroom instruction. Specific language functions—controlling, informing, forecasting/reasoning, and projecting—are defined, and the author suggests how children can practice these functions in the scope of a social studies lesson.

Stanford, Barbara D., and Gene Stanford. *Thinking through Language, Book Two.* Urbana, IL: National Council of Teachers of English, 1985. (ED 260 435). For senior high students, this guide is designed to build on the thinking skills in Book One (see Kirby and Kuykendall). The skills taught in this book fall into three categories: intuitive, rational, and integrative, with a heavy emphasis on reflecting and writing to develop and sharpen these skills.

*Stanton, Jane. "Thinking Together: Interaction in Children's Reasoning." In *Speaking and Writing K-12*, edited by Christopher Thaiss and Charles Suhor. Urbana, IL: National Council of Teachers of English, 1984. (ED 233 379). Dialogue journals can provide an instructional scaffold for guiding students' growth in critical thinking.

*Stibbs, Andrew. *Assessing Children's Language: Guidelines for Teaching.* London: Ward Lock Educational, in association with the National Association for the Teaching of English, 1979. Available from National Council of Teachers of English or Hayden Publishing Co. (ED 192 330). Stibbs illustrates ways of assessing writing and reading as a basis for discussing "what we are assessing." He contrasts narrow and complex views of "basics," and assesses tests and examinations for reading and writing alternatives including personal judgment, observation and checklists, and self-assessment.

Stotsky, Sandra. "Research on Reading/Writing Relationships: A Synthesis and Suggested Directions." *Language Arts*, May 1983, pp. 627-642. (EJ 280 836). The author reviews the research relating reading and writing, offers instructional implications of that research, and points out directions for further study.

Streff, Craig R. "The Concept of Inner Speech and its Implications for an Integrated Language Arts Curriculum." *Communication Education*, July 1984, pp. 223-230. (EJ 301 209). Streff reviews research that analyzes the functional and structural characteristics of inner speech. He discusses the implications of this research for the teaching of an integrated language arts curriculum.

Tchudi, Stephen N., and Susan J. Tchudi. ***Teaching Writing in the Content Areas: Elementary.*** **Urbana, IL: National Council of Teachers of English, 1983. (ED 232 211).**

Tchudi, Stephen N., and Margie C. Huerta. ***Teaching Writing in the Content Areas: Middle School/Junior High.*** **Urbana, IL: National Council of Teachers of English, 1983. (ED 232 213).**

Tchudi, Stephen N., and Joanne Yates. ***Teaching Writing in the Content Areas: Senior High School.*** **Urbana, IL: National Council of Teachers of English, 1983. (ED 232 212).** Separate booklets provide teachers of subjects other than language arts and English with current and research-based advice about the teaching of writing. Writing is used here as the medium through which subject-matter learning takes place. Model teaching units are provided for content areas ranging from history, folklore, and health, to social studies and the sciences. In each case, content objectives are given and writing ideas are described. There are lesson forms and follow-up sequences, as well as effective methods of evaluation and grading.

Tchudi, Stephen, ed. ***Language, Schooling, and Society.*** **Urbana, IL: National Council of Teachers of English, 1985.** This document discusses what has (and hasn't) happened in the language arts since the Dartmouth Conference of 1966. This and related issues concerned representatives from the International Federation for the Teaching of English at their 1984 meeting. The articles found in this volume represent authorities from England, Australia, Canada, New Zealand, and the United States.

Teale, William W. "Toward a Theory of How Children Learn to Read and Write Naturally."** ***Language Arts, **Vol. 59, September 1982, pp. 555-570. (EJ 267 028).** Teale explores characteristics of natural literacy development (without formal teaching). Interaction and adult support which is suited to the learner's development are described as key factors.

Thaiss, Christopher.** ***Language Across the Curriculum in the Elementary Grades. **Urbana, IL: National Council of Teachers of English, 1986. (ED 266 467).** Thaiss describes the language across the curriculum approach to learning, in which talking, writing, listening, and reading play critical roles in teaching all subject matter. Five classroom situations are described with children of different levels and needs.

Thaiss, Christopher.** ***Language Across the Curriculum. **ERIC Digest. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1984. (ED 250 699).** Examines the notion of language across the curriculum, or teaching writing, reading, speaking, and listening as interdependent skills rather than as separate subjects.

Thaiss, Christopher. ***Learning Better, Learning More: In the Home and Across the Curriculum. The Talking and Writing Series, K-12: Successful Classroom Practices.*** **Washington, DC: Dingle Associates, 1983. (ED 233 383).** This booklet examines the learning that takes place in the home where writing and speaking are tools to learn and communicate. It describes five elementary/secondary classroom situations where writing and speaking are used as a way to learn subject matter. Classes include social studies, science, mathematics, and behavioral science.

Thaiss, Christopher, ed. ***Writing to Learn: Essays and Reflections on Writing Across the Curriculum.*** **Dubuque, IA: Kendall/Hunt, 1983.** Essays on writing to learn in disciplines including social sciences, mathematics, and computer science, etc.

Thaiss, Christopher, and Charles Suhor, eds.** ***Speaking and Writing K-12. **Urbana, IL: National Council of Teachers of English, 1984. (ED 247 607).** This document presents a simple two-fold goal: to make recent research on oral communication and writing accessible to teachers and parents, and to present practical classroom-tested applications of this research.

Thelen, Judith N. ***Improving Reading in Science.*** **2nd ed. Newark, DE: International Reading Association, 1984. (ED 250 675).** This book combines a solid theoretical base with practical suggestions for the science teacher. The book focuses on diagnosis, prereading strategies, guided material, vocabulary reinforcement, and evaluation in the teaching of science.

Thornton, L. Jay. *Reading Skills and Vocational Education.* Columbus: Ohio State University. National Center for Research in Vocational Education, 1980. (ED 189 278). Thornton discusses reading in vocational education both as a curricular or educational issue and as an occupational or employment skill issue. He offers practical suggestions in both areas.

Tough, Joan. *Listening to Children Talking: A Guide to the Appraisal of Children's Use of Language.* Portsmouth, NH: Heinemann Educational Books, 1976. Tough examines the way in which children develop language, considers children with special needs in using language, and helps teachers identify a range of uses of language to assess what children have already learned to do with language and their needs.

*Tough, Joan. *Talk for Teaching and Learning.* Portsmouth, NH: Heinemann Educational Books, 1979. Tough discusses the nature of children's learning, the process of communication, and the purpose of education from age 7 to 13. Strategies for facilitating skills of thinking and learning through language are included.

*Tough, Joan. *Talking and Learning: A Guide to Fostering Communication in Nursery and Infant Schools.* Portsmouth, NH: Heinemann Educational Books, 1977. This book helps teachers recognize and use opportunities for promoting communication skills that arise during the normal activities of nursery and early primary schools.

Tovy, Duane R. "Inseparable 'Language and Content' Instruction." *Journal of Reading,* Vol. 22, May 1979, pp. 720-725. (EJ 204 636). Teachers must integrate the instruction of language and content if they wish to develop their students' cognitive abilities.

Verriour, Patrick. "Toward a Conscious Awareness of Language Through Drama." *Language Arts,* Vol. 60, September 1983, pp. 731-736. (EJ 286 518). The author discusses the role of language in drama in education and examines the levels at which drama can enhance learning and understanding of language: social, symbolic, and reflective.

*Vygotsky, L. S. *Mind in Society: The Development of Higher Psychological Processes.* Edited by M. Cole, V. John-Steiner, S. Scribner, and E. Sourberman. Cambridge, MA: Harvard University Press, 1978. (Original work published 1935). These selections of Vygotsky's writings examine human behavior through considering the development of speech in relation to tool use. The interaction between learning and development, the role of play in development, and the origins of written language are explored. A foundation for much current theory on the development of speech and written language, this book suggests that the child's zone of proximal development for an ability is the optimal level for instructional support.

*Vygotsky, L. S. *Thought and Language.* Edited and translated by E. Hanfmann and G. Vakar. Cambridge, MA: The MIT Press, 1962. (Original work published 1934.) Vygotsky examines the origins of intellectual development by tracing the origin and merger of thought and word. The zone of proximal development is introduced as the optimal level for instruction in concept formation.

Wagner, Betty Jane. *Integrating the Language Arts.* Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1985. (ED 263 627). Wagner provides a rationale for an integrated language arts curriculum and defines integrating the language arts curriculum as providing natural learning situations in which reading, writing, speaking, and listening can be developed for real purposes and real audiences.

Wagner, Betty Jane. "ERIC/RCS Report: Integrating the Language Arts," *Language Arts,* Vol. 62, September, 1985, pp. 557-560. (EJ 322 101). Wagner reviews materials from the ERIC system and other sources on providing natural learning situations in which reading, writing, speaking, and listening can be developed for real purposes and real audiences in the self-contained elementary classroom.

*Watson, Ken, and Bob Young. "Discourse for Learning in the Classroom." *Language Arts,* Vol. 63, February 1986, pp. 126-133. (EJ 329 396). Typical classroom discourse used by a transmission model teacher is compared with the more effective exploratory talk encouraged by an interpretation model teacher.

Way, Brian. ***Development Through Drama.*** **New York: Humanities Press, 1967.** Suggestions are made for drama experiences for classrooms at all levels woven into a theory of development. Purposes for drama, discipline and inner control, and program progression issues are stressed.

Weiner, Wendy F. "When the Process of Writing Becomes a Tool for Learning." ***English Journal,*** **Vol. 75, November 1986, pp. 73-75. (EJ 342 415).** The author reviews how a sophomore class of gifted students selected a subject for their learning logs; tells how to write a learning log; offers ideas on evaluating learning logs; and presents student reflections on the use of learning logs.

Wells, C. Gordon. ***Coding Manual for the Description of Child Speech.*** **Bristol, ENG: University of Bristol School of Education, 1973.** This manual for coding naturalistic speech samples collected in the longitudinal study of language development conducted at the University of Bristol includes schema for identifying language functions and communication acts and syntax.

Wells, C. Gordon. ***Coding Manual for the Description of Child Speech in its Conversational Context.*** **Rev. ed. Bristol, ENG: University of Bristol School of Education, 1975.** This is a revision of Wells' 1973 manual.

Wells, C. Gordon.** ***Learning Through Interaction: The Study of Language Development. **New York: Cambridge University Press, 1981. (ED 218 965).** This introduction to the field of language development gives an overview of what skills characterize normal language use; what is involved in learning to talk; how children make the transition from talking at home to talking at school; and how oral and written uses of language are related. It suggests that home language provides greater support for the child's learning through interaction.

Wells, Gordon.** ***The Meaning Makers: Children Learning Language and Using Language to Learn. **Portsmouth, NH: Heinemann Educational Books, 1986. (ED 264 572).** Wells studies children's language, literacy, and learning and follows the development of a representative sample of children from their first words to the end of their elementary education. It shows the active role that children play in their own learning and the differences between language used naturally at home and at school. Guidelines for supporting children's meaning making are provided.

Wiemann, Mary O., and John M. Wiemann. ***Nonverbal Communication in the Elementary Classroom.*** **Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills and Falls Church, VA: Speech Communication Association, 1975. (ED 113 771).** The Wiemanns discuss elements of nonverbal communication (environment and personal space, body movement and orientation, face and eyes, non-language vocal behavior) and the relationship between verbal and nonverbal language. Classroom activities are included.

Wilson, Marilyn J. "A Review of Recent Research on the Integration of Reading and Writing." ***The Reading Teacher,*** **Vol. 34, May 1981, pp. 896-901. (EJ 245 505).** Wilson reports on research which supports her argument that children learn to read and write in the same manner as they learn to speak, by forming hypotheses and testing them. She indicates that the processes of reading and writing must be taught integrally because of their mutual dependence upon each other and that children's desire to make meaning must serve as a guide to instruction in those processes.

Wolsch, Robert A., and Lois A. Wolsch. ***From Speaking to Writing to Reading: Relating the Arts of Communication.*** **New York: Teachers College Press, 1982. (ED 224 025).** This book proposes ways to increase language sensitivity of elementary and secondary students through a three-stage communication program: evoking visions through speech, fashioning revisions in writing, and sharing visions by reading.

Wolvin, Andrew D., and Carolyn G. Coakley. ***Listening.*** **Dubuque, IA: Wm. C. Brown, 1985.** The authors review theory and research and suggest activities at beginning and advanced levels of skill development.

Wolvin, Andrew D., and Carolyn G. Coakley. *Listening Instruction.* Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 1979. (ED 170 827). This introduction to listening theory centered on differing purposes for listening describes 38 activities for teaching listening skills at the secondary level.

Work, William. "Speech Communication and Other Basic Skills: On Poor Relations and Strange Bedfellows. ERIC Report." *Communication Education,* Vol. 31, January 1982, pp. 82-91. (EJ 257 630). Work presents an annotated bibliography of resources from the ERIC database on the relationships between speech communication (speaking and listening) and the language skills of reading and writing.

Wood, Barbara S. *Children and Communication: Verbal and Nonverbal Language Development.* 2nd ed. Englewood Cliffs, NJ: Prentice-Hall, 1981. This textbook follows the development of functional communication through the elementary school years and presents a series of communication competencies to be mastered during these years.

*Wood, Barbara S. "Oral Communication in the Elementary Classroom." In *Speaking and Writing, K-12: Classroom Strategies and the New Research.*, edited by Christopher J. Thaiss and Charles Suhor. Urbana, IL: National Council of Teachers of English, 1984. (ED 233 387). Wood suggests integration of oral communication in all subject areas through functions of language and examines classroom practices that promote and restrict communication.

Wood, Barbara S., ed. *Development of Functional Communication Competencies Pre-K-Grade 6.* Urbana, IL: National Council of Teachers of English, 1977a. (ED 137 858). This document suggests ways of helping children master the major task of learning how to communicate and identifies communication functions and describes aspects of communication competence.

Wood, Barbara S., ed. *Development of Functional Communication Competencies Grades 7-12.* Urbana, IL: National Council of Teachers of English, 1977b. (ED 137 859). Teachers can help adolescents learn about the uses of language, to try them out, and to see what works in everyday life.

Young, Art, and Toby Fulwiler, eds. *Writing Across the Disciplines.* Upper Montclair, NJ: Boynton Cook, 1986. (ED 264 592). Writing should be the business of the entire school community. The authors examine measurable effects on faculty and students and the implications for other teaching communities and for individuals in and out of English and humanities departments of an eight-year writing-across-the-curriculum program in a technical college.

Appendix

APPENDIX

Practice in Use of the 'Form for Analyzing Communication Abilities and Understandings Across the Curriculum'

To integrate communication processes and skills more effectively into their instructional programs, teachers need to become proficient in identifying the communication abilities and understandings required in the learning experiences they use. They also need to be able to anticipate, monitor, and support students' growing communication abilities. The "Form for Analyzing Communication Abilities and Understandings Across the Curriculum" is a tool for such analysis.

Since concern for uses of communication may be new to some teachers, use of the form may require practice. This appendix provides analyses of the communication processes and skills required in two classroom learning experiences that could occur in any curricular area and at any level. The first is for a communication situation described earlier—T's use of learning logs and small-group sharing before class discussion. Because of its familiarity, it will be useful for beginning practice. The second situation involves use of a guest speaker.

To be most effective, it is important to follow the procedures outlined here step by step. At certain points, teachers are encouraged to discuss their responses with a colleague who is also using this guide before comparing them to the analyses provided. This sharing will aid understanding of the nature of the interactive model of communication which is the foundation for this guide. It will also facilitate internalization of the analysis process.

Analyzing Students' Abilities in Using Learning Logs and Small-Group Sharing

1. To re-familiarize yourself with the learning experience, reread the scenario, p. 7. Next, reread pp.25-28, which describe T's attempts to meet individual needs in use of logs through incidental instruction. Also, review pp.31-34, showing how students' needs in use of logs were met through direct instruction.
2. Use Diagram 4 to analyze the communication abilities and understandings required of T's students in their use of learning logs. Complete steps 1-7 in Table 5, "Steps for Using this Guide and the Communication Analysis Form," which is reprinted here for your convenience. This will require reference to the scenario descriptions.
3. If possible, share your responses with a colleague. Discuss similarities and differences in your interpretations of the abilities required (column 2), the abilities T's students demonstrated (column 3, observed), the abilities for which they needed instructional support (column 3, needed), and the extensions that T planned (column 4).
4. Compare your analysis with the one provided in Diagram 5. If possible, discuss similarities and differences with a colleague. As you compare results, remember that interpretation is necessary in analyzing communication abilities. Therefore, your form need not replicate Diagram 5 exactly. Rather, consider whether you were able to identify the main language functions and communication acts used to carry them out. Also, consider whether you listed at least key abilities that T's students used successfully, as well as abilities that some or all of the students needed in order to use learning logs more successfully. If your analysis is greatly different from Diagram 5, it would be useful to reread the scenarios and review Diagram 1 and Tables 1-4 to identify causes for differences before going on to practice with the learning experience involving a guest speaker.

Analyzing Students' Abilities in Gaining Information from a Guest Speaker

The following classroom situation is included to provide additional practice with the analysis form. It involves T's use of a guest speaker to answer students' questions concerning the objects they examined. Read the scenario and then follow Steps 1-7 in Table 5 using Diagram 6 to record your analysis. Again, discussion with a colleague is encouraged before and after comparison with the analysis provided in Diagram 7.

Communication in a Classroom: A Visit by a Guest Speaker

The Setting: A classroom in your teaching area and level in a school district in Iowa.

The students enter the room and help one another find their places at work areas around the room where the objects they have been learning about are again displayed. They exhibit both anticipation and hesitancy as they notice that the guest speaker they have planned for is waiting at the side of the room.

T waits until everyone is ready and then suggests that students find the questions the class has prepared before meeting their guest. When students have their materials ready, T introduces the guest and encourages students to begin asking their questions. T is prepared to observe the interaction and to support students in their use of questioning strategies and of comprehension skills necessary for interpreting the information they receive.

Immediately, T notices that students seem reluctant to begin the questioning. Various students use facial signals and gestures to cue others to go first. T moves to one group, picks up an object that these students had differing ideas about, and says, "It might help to begin with the questions we had about how this was used. A, will you remind us of the ideas that your group had?"

As A begins, T stays nearby to assure the student of support. After A's brief explanation, T says, "Now, remind me what your questions were."

Students in the group respond by posing two or three questions they had discussed. Because they perceive their audience to be T and their classmates, rather than the guest, they share freely. To include the rest of the class, T asks which other groups had the same questions. T then addresses the first question to the guest and, following the response, encourages different students to recall the remaining questions in the series. Their guest responds to each in turn, demonstrating and elaborating when it appears that students want greater detail.

When this series of questions is finished, T asks the students if they think they will be able to remember all they have learned so far. Students' facial expressions show doubt. T asks, "What do you think we could do to help us remember and to be sure we understand?"

T is pleased when one student suggests sharing what they heard with a partner, a strategy they have used recently as an aid to understanding and memory. T repeats the questions already considered, and encourages partners to share their interpretations. When talk subsides T asks for volunteers to share with the class. After each response T elicits elaboration by other students and the guest.

To promote confidence in their ability to question a guest speaker to gain information, T identifies the group that will question next, asking them if they want a minute or two

to prepare their questions. T notices that students refer to their lists and determine who will ask which question.

Following the guest's responses to the second set of questions, T asks if the students are ready for the next group. When the students suggest time to review what they learned before going on, T is aware that the instructional scaffold provided initially has supported the students' use of strategies for comprehension and recall.

As students continue to question the guest, T observes that they become less tied to their predetermined list of questions, and more able to use follow-up questions either to clarify a point or to query an issue not previously identified. When all of the students have had an opportunity to pose their questions, T encourages them to thank their guest.

To explore the effects of recent instruction about the uses of various kinds of logs for recording information, T asks what the students think the best way to deal with the information they have gained would be. T is interested to observe that many students suggest using learning logs to record the information they gathered so that they have it for future reference.

Analyzing Your Use of Communication Across the Curriculum

When you have completed the practice exercises, you are ready to analyze your own uses of communication for learning following the 10 steps suggested in Table 5 and suggestions contained in the section on infusing communication across the curriculum. To facilitate use of the analysis form, an additional blank copy is provided. Feel free to duplicate this form.

Table 5
Steps for Using this Guide and the Communication Analysis Form
reprinted from page 45

1. Identify and describe the curricular segment to be analyzed (learning activity, lesson, unit, etc.) in column 1.
2. Prior to scheduling the target learning experience, use Diagram 1 and Table 1 to identify the communication processes to be used (column 2).
3. In column 3, identify abilities and understandings that you anticipate students possess (observed) and abilities that you anticipate will require instructional support (needed).
4. For anticipated needs, determine which approach you think will best support your instructional objectives and enhance growth in communication to learn (incidental; direct, in-context lesson; direct, in-context unit) and plan for that instructional approach using guidelines in the strategies section.
5. Identify and plan for extensions to enhance learning through communication. Diagram 1 and Table 2 can be used to identify potential uses of oral, written, and visual communication.
6. During and after instruction, use columns 2 and 3 of the form to monitor uses of communication and to provide for additional needs that emerge through use of incidental teaching strategies and subsequent direct instruction.
7. After the learning experience, use column 4 to record extensions to enhance learning through communication for use when the learning experience is taught again.
8. To consider the range of communication situations with which students have had experience, and to monitor their progress in the use of communication processes and skills, review a series of mapping forms for the group.
9. To improve horizontal articulation of communication across the curriculum, share results of analyses of communication abilities with other teachers at your level, especially those who work with the same group(s) of students.
10. To improve vertical articulation of growth in communication, share results of analyses with teachers who share responsibility for your teaching area(s) at other instructional levels and with the total faculty who share responsibility for students over time.

Diagram 4
Blank Form for Scenario on Page 7

Form for Analyzing Communication Abilities

Teacher _____

Level _____

Directions: Briefly describe the learning experiences used in Column 1. In Column 2, use Diagram 1 and Table 1 to identify Individual Capacities, Language Functions and Communication Acts, Mode(s), and Audience(s).

Column 1 **Brief Description of Learning Experience**	**Column 2** **Individual Capacities, Language Functions and Communication Acts, Communication Mode(s), and Audience(s)**

and Understandings Across the Curriculum

Course/Area/Unit _____

Dates or Time Span _____

Use Tables 1 through 4 to identify observed and needed communication abilities and understandings in Column 3. List extensions to enhance learning through communication in Column 4.

Column 3 Communication Abilities and Understandings		Column 4 Extensions to Enhance Learning through Communication
Observed	Needed	

Diagram 5
T's Entry for Scenario on Page 7

Form for Analyzing Communication Abilities

Teacher T

Level Any

Directions: Briefly describe the learning experiences used in Column 1. In Column 2, use Diagram 1 and Table 1 to identify Individual Capacities, Language Functions and Communication Acts, Mode(s), and Audience(s).

Column 1 **Brief Description of Learning Experience**	**Column 2** **Individual Capacities, Language Functions and Communication Acts, Communication Mode(s), and Audience(s)**
Use of learning logs with diagrams and captions to record observations and questions after small-group examination and discussion of object.	Use visualization, thinking, and language to conceptualize observations, identify relationships, and form questions. Use motor skills to record ideas in writing and through visuals. Informing, imagining, feeling, controlling, ritualizing. Making statements, describing, labelling, associating, concluding, wondering, questioning, reflecting, recalling, monitoring own actions, using conventions of recording in learning logs and in visuals. Written and visual modes. Self.

and Understandings Across the Curriculum

Course/Area/Unit Any

Dates or Time Span x/xx/xx

Use Tables 1 through 4 to identify observed and needed communication abilities and understandings in Column 3. List extensions to enhance learning through communication in Column 4.

Column 3 Communication Abilities and Understandings Observed	Needed	Column 4 Extensions to Enhance Learning through Communication
Ability to recall observed features and perceive relationships. Ability to conceptualize ideas. Recognizes that the same information can be presented in the oral, written, and visual modes. Recognizes value of visuals to record information Ability to use a log to record observations and questions. Ability to use skills of writing and visual presentation to convey an intended message or to comprehend meaning from another's message. Ability to provide feedback concerning a peer's draft. Ability to accept and consider a peer's suggestions when revising and editing.	Difficulty stating a perceived generalization verbally. Ability to defer attention to editing and proofreading until message is drafted. Ability to select colors to clarify intended meaning. Ability to select captions to clarify meaning and capture attention. Ability to anticipate audience needs in preparing a written or visual message. Ability to relate information presented in labels and captions to information presented visually. Ability to decide when to use visuals, words, or both to convey a message.	Opportunity to share written and visual drafts with a partner while composing entries in learning logs. Sharing entries with a new partner in preparation for listing of conclusions and questions by the whole class.

Diagram 6
Blank Form for Scenario on Pages 73-74

Form for Analyzing Communication Abilities

Teacher _____

Level _____

Directions: Briefly describe the learning experiences used in Column 1. In Column 2, use Diagram 1 and Table 1 to identify Individual Capacities, Language Functions and Communication Acts, Mode(s), and Audience(s).

Column 1 **Brief Description of Learning Experience**	**Column 2** **Individual Capacities, Language Functions and Communication Acts, Communication Mode(s), and Audience(s)**

and Understandings Across the Curriculum

Course/Area/Unit _____

Dates or Time Span _____

Use Tables 1 through 4 to identify observed and needed communication abilities and understandings in Column 3. List extensions to enhance learning through communication in Column 4.

Column 3 **Communication Abilities and Understandings**		**Column 4** **Extensions to Enhance Learning through Communication**
Observed	Needed	

Diagram 7
Completed Entry for Scenario on Pages 73-74

Form for Analyzing Communication Abilities

Teacher _____

Level _____

Directions: Briefly describe the learning experiences used in Column 1. In Column 2, use Diagram 1 and Table 1 to identify Individual Capacities, Language Functions and Communication Acts, Mode(s), and Audience(s).

Column 1 **Brief Description of Learning Experience**	**Column 2** **Individual Capacities, Language Functions and Communication Acts, Communication Mode(s), and Audience(s)**
Questioning a guest speaker to gain information and comprehending information received.	Use of memory, reading, and language to recall and pose questions. Use of listening, thinking, and talking to interpret responses and formulate additional questions. Feeling, controlling, ritualizing, informing, imagining. Monitoring own and others' actions, expressing anticipation and hesitancy, greeting, seeking another's attention, directing, explaining, questioning, acknowledging, concluding, reflecting, collaborating, describing, clarifying, speculating, thanking, planning. Oral, written, and visual/nonverbal modes. Self, partners, small known group, and unknown individual.

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and Understandings Across the Curriculum

Course/Area/Unit _____

Dates or Time Span _____

Use Tables 1 through 4 to identify observed and needed communication abilities and understandings in Column 3. List extensions to enhance learning through communication in Column 4.

Column 3 Communication Abilities and Understandings		Column 4 Extensions to Enhance Learning through Communication
Observed	Needed	
Ability to direct own and others' actions in class routines. Ability to greet unknown adult. Use of nonverbal signals to seek attention and direct peers. Ability to recall questions with help of visual support. Ability to state questions confidently to known audience. Recognition of need for memory aids. Ability to suggest and use talk with a partner to interpret and recall information. Ability to summarize information. Ability to organize group questioning. Ability to thank guest. Identification of writing in learning logs as a way to retain information for future use.	Lack of confidence in addressing unknown adult. Ability to pose questions to unknown adult without support or rehearsal.	Use of learning logs to record information for future reference.

Form for Analyzing Communication Abilities

Teacher _____

Level _____

Directions: Briefly describe the learning experiences used in Column 1. In Column 2, use Diagram 1 and Table 1 to identify Individual Capacities, Language Functions and Communication Acts, Mode(s), and Audience(s).

Column 1 **Brief Description of Learning Experience**	**Column 2** **Individual Capacities, Language Functions and Communication Acts, Communication Mode(s), and Audience(s)**

and Understandings Across the Curriculum

Course/Area/Unit _____

Dates or Time Span _____

Use Tables 1 through 4 to identify observed and needed communication abilities and understandings in Column 3. List extensions to enhance learning through communication in Column 4.

Column 3 Communication Abilities and Understandings		Column 4 Extensions to Enhance Learning through Communication
Observed	Needed	

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